Evaluation of Unicef-GOS 2002-2006

Country Health And Nutrition Programme

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Consultants for UNICEF
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### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACSI</td>
<td>Accelerated Child Survival Initiative</td>
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<tr>
<td>AFP</td>
<td>Acute Flaccid Paralysis</td>
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<td>ANC</td>
<td>Antenatal Care</td>
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<td>AMT</td>
<td>Area Management Team</td>
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<td>ARI</td>
<td>Acute Respiratory Infection</td>
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<td>ARV</td>
<td>Antiretroviral Treatment</td>
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<td>AWD</td>
<td>Acute Watery Diarrhoea</td>
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<td>AWP</td>
<td>Annual Work Plan</td>
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<td>BHU</td>
<td>Basic Health Unit</td>
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<td>CBAW</td>
<td>Child Bearing Age Women</td>
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<td>CAG</td>
<td>Cash Advancement to Government</td>
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<td>CFCI</td>
<td>Child Friendly Community Initiative</td>
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<tr>
<td>CMT</td>
<td>Country Management Team</td>
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<tr>
<td>CHW</td>
<td>Community Health Worker</td>
</tr>
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<td>CPA</td>
<td>Comprehensive Peace Agreement</td>
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<td>DOTS</td>
<td>Directly Observed Treatment - Short-course</td>
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<tr>
<td>DPT</td>
<td>Diphtheria, Pertussis and Tetanus</td>
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<tr>
<td>EmOC</td>
<td>Emergency Obstetric Care</td>
</tr>
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<td>EMRO</td>
<td>East Mediterranean Regional Office-WHO</td>
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<tr>
<td>EPI</td>
<td>Expanded Program on Immunization</td>
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<td>ER</td>
<td>Emergency Resources</td>
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<tr>
<td>FGM/C</td>
<td>Female Genital Mutilation/Cutting</td>
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<td>FMOH</td>
<td>Federal Ministry of Health</td>
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<tr>
<td>FP</td>
<td>Family Planning</td>
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<tr>
<td>FRHD</td>
<td>Federal Reproductive Health Department</td>
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<tr>
<td>GAVI</td>
<td>Global Alliance for Vaccines and Immunization</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GFATM</td>
<td>Global Fund to fight AIDS, Tuberculosis and Malaria</td>
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<td>GIVS</td>
<td>Global Immunization Vision Statement</td>
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<tr>
<td>GOS</td>
<td>Government of Sudan</td>
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<td>GoNU</td>
<td>Government of National Unity</td>
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<td>GOSS</td>
<td>Government of South Sudan</td>
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<tr>
<td>HAS</td>
<td>Health Area system</td>
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<td>HC</td>
<td>Health Centre</td>
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<td>HO</td>
<td>House Officer</td>
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<tr>
<td>HV</td>
<td>Health Visitor</td>
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<tr>
<td>ICC</td>
<td>Interagency Coordinating Committee</td>
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<tr>
<td>ICPD</td>
<td>International Conference on Population and Development</td>
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<td>IDP</td>
<td>Internally Displaced Person</td>
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<td>IDD</td>
<td>Iodine Deficiency Disorder</td>
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<td>IEC</td>
<td>Information Education and Communication</td>
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<td>IMCI</td>
<td>Integrated Management of Childhood Illness</td>
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<td>INC</td>
<td>Interim National Constitution</td>
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<tr>
<td>IPT</td>
<td>Intermittent Preventive Treatment</td>
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<td>ITN</td>
<td>Insecticide-Treated Net</td>
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<td>LGL</td>
<td>Local Government Law</td>
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<td>LHS</td>
<td>Local Health System</td>
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<td>LLITN</td>
<td>Long Lasting Insecticide Treated Nets</td>
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<td>JAM</td>
<td>Joint Assessment Mission</td>
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<tr>
<td>MA</td>
<td>Medical Assistant</td>
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<td>MCH</td>
<td>Maternal and Child Health</td>
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<tr>
<td>MDG</td>
<td>Millennium Development Goal</td>
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<td>MICS</td>
<td>Multiple Indicator Cluster Survey</td>
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<td>MMR</td>
<td>Maternal Mortality Ratio</td>
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<td>MO</td>
<td>Medical Officer</td>
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<tr>
<td>MOU</td>
<td>Memorandum Of Understanding</td>
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<td>NFF</td>
<td>National Fortified Foods</td>
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1. Executive Summary

The baseline situation of women and children before the start of the 2002-2006 UNICEF Health and Nutrition Programme can be described from MICS 2000. This survey reported child (under 5) mortality and infant mortality in northern Sudan were 104 and 68, respectively. ARI, malaria, diarrhoea, combined with malnutrition were identified as the main causes of child deaths. A prevalence rate of 28.2% for diarrhoea, 16.7% for ARI were found in U5 children in northern Sudan in 2000.

MICS 2000 data also indicated that approximately 64.5% of children received a BCG vaccination by the age of 12 months. The coverage for measles vaccine was 51.5%. There was a considerable drop out rate for the second or third dose of DPT and Polio. The first dose of DPT and Polio was given to 65.9% and 74%, respectively. The third dose of DPT and Polio dropped to 46.2% and 44.2%, respectively. The percentage of children who had all eight recommended shots was only 26.4% in northern Sudan.

15.7% children under age five in Sudan were wasted (moderate and severe) and 3.8% were classified as severely wasted, according to MICS 2000. Approximately 31% of babies weighed less than 2500 grams at birth. About 44% of children received a high dose Vitamin A supplement. Approximately 19% of children aged less than four months in northern Sudan were exclusively breastfed.

Overall, 22.8% of U5 children were reported having fever in the last 2 weeks prior to the survey. Only 22.5% of febrile children got appropriate malarial treatment. Coverage of insecticide-treated nets within U5 children was only 2% though 24% of U5 children used a bed net, according to MICS. Only 0.6% of households had adequately iodised salt.

According to the SMS 1999, the MMR was 509 per 100,000 live births. According to MICS 2000, about 70% of the women in northern Sudan received antenatal care from skilled personnel. Skilled personnel delivered about 87% of births (midwives and trained-TBAs delivered 43% and 29% respectively). Only 21% of married women had ever used a method of family planning and 7% were currently using a method. Little activity had been done for HIV/AIDS in Sudan before 2002, though a prevalence of 1.6% was reported that year. The distribution of health facilities and health personnel was not equitable. On average, in 2002, less than half (43.6%) of all health facilities in northern Sudan offered RH services and some services, like EmOC, were seriously lacking.

The objectives of the evaluation were to carry out a comprehensive end of cycle review to gain an understanding of the successes and failures during implementation, draw lessons learned and make recommendations based on the findings. The methodology used included desk review, key informant interviews, cost-benefit analysis, and field visits.

Results showed that UNICEF deserved strong praise for its central role in the provision of primary health, immunisation, child health and nutrition, emergency essential health care services in Sudan.

During the 2002-2006 programme cycle, UNICEF provided valuable support to the government in accordance with its obligation as set out under the Convention of the Rights of the Child, to protect and promote the rights of children to survival, development, protection and participation.

The dimension of the assistance from UNICEF was comprehensive. These dimensions included advocacy at policy level, service delivery on the ground, institutional support at federal and state level, and capacity building of service/care providers. UNICEF supported the establishment and rehabilitation of health facilities and provision of equipment, supplies and essential medicines. Routine operation and campaign activities were supported, as well as fund raising, programme
design and planning, joint monitoring and supervision. In addition to these activities in focus states, the programme also covered activities in non-focus states with respect to projects of national thrust (namely EPI, emergency planning and response, malaria control, HIV/AIDS and micronutrient supplementation).

The years 2002-2006 were a period during which the country had not yet recovered from its decades of conflict. It was a period when natural and man-made emergencies frequently occurred with considerable impact on the population. The period also carried a mix of frustration and hope, ups and downs; during which many sectors demanded development and was a period in which primary health, child and maternal health care were waiting to build momentum. Despite the many constraints the programme had faced, it ended by fulfilling some of its targets and reaching noticeable achievements.

The major achievement of the programme was progress in immunization. UNICEF consistently provided leading support on routine immunization service, ranging from expansion of fixed sites delivery immunization, provision of vaccines and cold chain equipment, to training vaccinators and programme managers. As a result, the capacity of routine immunization in Sudan has largely improved across planning, management, information reporting, and surveillance. Health facilities with EPI service increased from 40% to 75%. Overall coverage of routine immunization, DPT3 as an example, increased from 70% to 85%. Together with other partners including WHO, UNICEF provided support on supplemental immunization activities such as polio NIDs, measles campaigns, and vaccination activities to prevent diseases such as meningitis, yellow fever, hepatitis, and tetanus. Though polio was not eradicated, reported cases and outbreaks which had been devastating in the past were largely avoided.

The second achievement of the programme was the effort exerted on Malaria control. During the latter half of the programme period, reported malaria cases and deaths were continuously decreasing. This was largely due to the combined improvements on prevention, diagnosis and treatment. UNICEF contributed to all these preventive and curative measures, with supplies of long lasting Insecticide treated nets, provision of ACT anti-malaria drugs, capacity building and upskilling of lab technicians and health workers, and with institutional support to malaria departments and their human resource development. During field visits, it was observed that primary health care providers showed confidence and skills in handling malaria cases. Supplies and management were an integral part of routine service delivery.

During 2002-2006, there were many emergency situations, due to conflict, natural disasters such as flooding, disease outbreaks, and Darfur crisis. UNICEF proved to be always available whenever and wherever the need was required. In addition to technical assistance and capacity building support, UNICEF was responsible for provision of supplies, such as life saving and essential drugs, vaccines, supplementary & therapeutic feeding supplies, PHC kits, health education materials, safe delivery kits, mosquito bed nets & insecticides, Non Food Items such as jerry cans, and water treatment. The coordination procedures and processes within UNICEF and externally with its partners have ensured that it fulfilled its core planning commitments towards emergency situations in Sudan, by conducting an assessment of the emergency situation within 48 hours, and being able to release prepositioned supplies to assist 35,000 persons within 10 days, for a period extending to 2 months.

UNICEF supported the primary health care system, through the establishment and rehabilitation of health facilities, provision of PHC kits and other equipment, the training of first-tier health providers to deliver essential care to address the main child diseases responsible for preventable child mortality. UNICEF, together with UNFPA, shared the responsibility to support midwifery school training, provision of midwifery kits, and installation of EmOC services. This effort, though still need more
inputs to yield major reductions in maternal mortality, ensured greater access to quality basic obstetric care for many women previously without access. A number of nutrition surveys and sentinel surveys in northern Sudan were conducted with the support of UNICEF. UNICEF also supported Vitamin A supplementation through Polio NIDs, iodized salt consumption through policy and legislation and provision of iron supplementation to pregnant women. Through the activities of NGOs, the operation of SFCs and the TFCs were jointly supported by WFP and UNICEF. Though this strategy might not be the long-term solution to reverse children’s malnutrition status in conflict areas, it ensured that child malnutrition was not deteriorating in the country.

The HIV/AIDS intervention during the cycle targeting vulnerable groups, such as youth and women, was slowly rolled out at the beginning, but was in a better position at the end of programme cycle. Seven PMTCT centres were established and operational in South Darfur, Khartoum, Kassala, North Kordofan, and Red Sea states. Those who tested HIV positive were subsequently provided with ARV treatment.

The GoS-UNICEF 2002-2006 programme did not achieve an impact on reducing child mortality and maternal mortality rates, based on the limited data available. The broader impact of the programme, which could not be measured in numbers, was evidenced in process indicators, like improvements in ANC delivery, deliveries by skilled personnel, reductions of disease burden and PHC provision to women and children. Positive effects of inter-sectoral activities between health, education, water and environmental sanitation in addressing mortality rates were also observed.

There was a noticeable impact on the programme environment. A variety of policies and plans were designed at both National and State levels. At the grass root level, community was aware of the Programme. The concerns of families about child immunization, child nutrition, child rights and disease prevention were strengthened. Despite its fragility in some areas, a peaceful environment became conducive to the various activities of the Programme. Previous areas of conflict started to return to normal allowing various activities to be sustained.

In light of the SHHS results, and as part of the extensive joint planning exercises undertaken across the health sector, key opportunities to have a distinct impact on the overall environment included promotion and implementation of the Accelerated Child Survival Initiative (ACSI). ACSI attempted to scale up existing projects, especially the Expanded Programme on Immunization and nutrition, while identifying capacity and resource shortfalls and prioritizing specific activities at local, state and national levels.

The following suggestions are advanced for consideration in the design of the coming programme cycle, which we would hope will accelerate progress towards MDGs.

1) Continue ongoing policy development and enhance its implementation. Development of state strategies and policies is needed.

2) Initiation of a systematic integrated human resource development policy, with solutions to stop brain-drain at top, provide career ladder at bottom. This should include mechanisms to encourage the health cadres serving the people in rural areas, and opportunities for state and federal health officers to obtain rural field experience.

3) To guard against sudden fluctuations in the flow of funds, there is need to develop a strategy for programme sustainability to be gradually and smoothly introduced, enlist government commitment to sustainability.

4) There should be a shift of focus from emergency to sustainable development. More focus should go to identify gaps in service delivery and filling these gaps, and to take a balance between service expansion and quality of the service. More focus is needed on communities with potential for quick-win at population level, rather than remote disadvantaged communities.
5) More focus on prevention, community health, rather than cure to break the cycle of disease transmission.
6) More focus on providing essential services to the communities in rural areas and training their first-tier service providers, rather than nurturing academic training that is not suitable for rural populations.
7) Improve programme design with clear defined indicators and targets versus known baseline, combine impact and outcome indicators with process indicators and targets to be checked and monitored annually.
8) Develop a comprehensive monitoring and evaluation plan to be used for the programme cycle.
9) Continue decentralized management, and improve budgeting. Federal level should shift focus on policy/guidelines/protocol development, planning support, supervision, monitoring and evaluation.
10) Improve programme implementation and its quality, with effective coordination, with more attention to routine management, and quality of supervision.
11) Improve the quality of the primary health care service through guidelines, effective management and supervision. Explore the potential of primary health first-tier service providers to provide integrated service such as community health, nutrition, and obstetrics care.
12) Continue the support of midwifery schools, provide reproductive health services, and improve the quality of obstetrical care. Expand PMTCT service.
13) Continuous improvement of routine immunization service, enhancing the coverage, improving supervision and raising the efficiency of immunisation, providing service and strong coordination across borders with neighbouring countries, creating a balance between routine activities versus campaigns, and identifying gaps to be filled by real supplementary service.
14) Health information should be strengthened. Routine data collection and data quality issues should be addressed. States and localities should have clear instructions regarding which health information items are essential for collection and how/when to collect them and how the data can be used. Maintaining the political stability will help the health information collection and its trend analysis.

2. Situation Analysis

Based on the available information, the following analysis focuses on the situation and its priorities at the time of GoS-UNICEF commencing its 2002-2006 programme cycle. To give a more thorough understanding of the problems and their complexities, the historical situation before 2002, including epidemic outbreaks and their strategies in the past, and the state of the Sudan health system will be briefly introduced to supplement the description of the emergency situation during 2002-2006.

2.1 Sudan health system and its administration

The health care system of the Sudan is one of the oldest in Africa and started and developed with strong research and training components. Constitutionally the system of government is federal. There is a multi-tier government system comprising Federal, State and Local governments. The country is divided into 25 states (15 in northern Sudan and 10 in South Sudan) and 134 localities (87 in northern Sudan and 47 in South Sudan). A state is administered by a Wali (Governor) with a cabinet of 5-7 Ministries and with localities administered by a Commissioner.

Sudan has a long history of decentralization starting from 1951. Decentralization was introduced as a system of governance compatible with the multi-ethnic and multi-cultural society of Sudan. The federally promulgated Local Governance Law 2003 (LGL 2003) provides substantial political, administrative and financial powers to state and local governments.
The Sudan health system is decentralized with specific responsibilities assigned to the three levels of government. The Federal government is responsible for policy making, planning, coordination and supervision, while the State governments are in charge of policy making, planning and implementation at the State level. Localities and counties are responsible for policy implementation and service delivery. The health system is managed at the Federal level by the Federal Ministry of Health (FMOH) and at the State level by State Ministry of Health (SMOH).

Primary health care (PHC) is an important component of the national health system which also supports hospital-based health care and other programmes. The Sudan health system is based on a spectrum of health facilities ranging from PHC units to university teaching hospitals and specialized hospitals. These facilities are owned and operated by the government. PHC services are currently delivered through a network of PHC units, dressing stations, dispensaries, health centers (HC) and rural hospitals (RH). According to the new structure of the service delivery system, basic health units (BHU) replace the former PHC units, dressing stations and dispensaries, and constitute the lowest level of care.

In 2002, the system had 38 specialist hospitals, 66 general hospitals, 194 rural hospitals, 851 health centers and 1,365 rural dispensaries (a total of 2,514 health facilities). The distribution of these facilities by state was not equitable. Khartoum possesses a disproportionate number of health facilities compared to other states. Up to 2002, only ten northern Sudan states had adopted the health area system (HAS), now called the local health system (LHS) and only 79 areas were actually functioning.

With respect to health personnel in 2002, the Sudan health care system had in its employment a total of 3,008 professional health personnel (specialists, registrars, MOs and HOs) of whom 864 were specialists and 1,729 MOs. Khartoum consumed almost three-quarters (74.8%) of the country’s professional health personnel. In the same year, the system had in its employment, 18,239 auxiliary health personnel (MAs, HVs, NMWs, VMWs and TTBAs). Khartoum SMOH employed about 60.8% of paramedical personnel in the country. Comparing state shares to their population weights revealed marginalization of the three Darfur states, the Kordofan states, Blue Nile and to a lesser extent Gedaref state.

The penetration of health facilities and allied health personnel to the periphery of the health care system are fundamental assets to any successful health programme. Judged by the standards of the day, a wide spectrum of Sudanese health personnel, instead of being a great asset to the potential development of the health care system, were lost by the system due to poor facilities, poor supervision and unattractive working environments and poor/delayed payment for employed services. Moreover, in recent decades professional cadres have increasingly resented their poor working conditions at state level, resulting in either their overcrowding in KHS or their loss to private practice, to other Gulf countries and the West, resulting in a very high attrition rate of skilled, qualified personnel from the system.

2.2 Child health

MICS 2000 reported that child (under 5) mortality and infant mortality in northern Sudan were 104 and 68, respectively. ARI, malaria, diarrhoea, combined with malnutrition were identified as the main proximate causes of child deaths in Sudan. Neonatal mortality was largely contributing to infant mortality. A prevalence rate of 28.2% for diarrhoea, 16.7% for ARI were found in U5 children in northern Sudan in 2000.
2.3 Malnutrition

15.7% of children under the age of five in northern Sudan were wasted (either mild and moderate) and 3.8% were classified as severely wasted, according to MICS 2000.

It was estimated that approximately 31% of infants in northern Sudan weighed less than 2500 grams at birth. 44% of children aged 6-59 months in northern Sudan received a high dose of vitamin A supplementation in the previous six months. Approximately 19% of children aged less than four months in northern Sudan were exclusively breastfed.

Among the 97% of households that had salt tested during the MICS 2000, only 0.6% had adequately iodised salt in northern Sudan

2.4 Maternal health

According to MICS 2000, only 21% of currently married women had ever used a method of family planning and 7% were currently using a method. About 70% of the women in northern Sudan received antenatal care from skilled personnel (doctor, health visitor, midwife, trained TBA). Skilled personnel delivered about 87% of births occurring in the year prior to the survey, with doctors only attending 6% of deliveries.

2.5 Epidemic Disease

The major epidemic diseases that Sudan suffered from were malaria, meningitis, measles, yellow fever, acute watery diarrhoea/cholera. Except for desert areas, malaria was one of the main causes of child mortality. In recent years, HIV/AIDS has emerged as a new challenge for the country. The burden of the above epidemic diseases in the country and their epidemic pattern is summarized below:

2.5.1 Malaria

Malaria is both geographically and seasonally determined in northern Sudan. The northern desert area is malaria free, while in other parts of northern Sudan, the transmission has a seasonal pattern related to the rains and rise of the Nile River.

The main victims and carriers of the disease are under 5 children. Overall in northern Sudan, 22.8% of U5 children reported having fever in the last 2 weeks, and only 22.5% of febrile children got appropriate malarial treatment such as chloroquine, according to MICS 2000 data. Coverage of insecticide-treated nets of U5 children was very low, with only 8% use, though 24% of U5 children used a bed net, according to the MICS 2000 survey.

One has to refer to the health history of Sudan to understand the state of malarial disease in the country. As early as 1902, the malaria battle started. The “Mosquito Brigades” campaign was initiated by Balfour to fight mosquitoes in Khartoum. The brigades oiled water with a mixture of petroleum, drained and cleaned the breeding sites and treated all steamers coming to Khartoum. Mosquito control was a success in Khartoum at that early time.

During 1920 to 1940, attention shifted to the Gezira Irrigation Scheme and rural areas to protect the labour force. The malaria control efforts continued in many areas in Sudan and passed through the following stages: Pilot schemes for residual spraying in semi-urban and rural areas were initiated in the early 1950s. During 1970s-1980s, the Blue Nile Health Project, a partnership programme,
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decreased malaria prevalence from over 20% to less than 1% and sustained this prevalence level for more than 10 years. The cessation of the project was followed by major malaria epidemics in the early 1990s in Gezira area.

In 1998, Roll Back Malaria (RBM), a global quadripartite inter-agency initiative, established jointly by WHO, UNICEF, UNDP and the World Bank was integrated in the National Malaria Control Program in Sudan. UNICEF Terms of Reference within RBM focus on (i) giving special attention to the most vulnerable groups in the community, namely women and children; (ii) availing insecticide-treated bed nets (ITNs) to families through a resource network; (iii) enhancing community mobilization and sensitization towards malaria control and supporting community-based interventions for improving health and nutrition. As of April 2005, Sudan has become a recipient of the malaria GFATM Round (2) grant which is currently under implementation to the amount of $US 33.4 million over a 5 year time-frame.

2.5.2 Meningitis

In the savannah areas of the Sudan, known as “epidemic belt”, epidemic disease often emerged in the past. Meningitis was one of those diseases. It had often started during the dry season and stopped when the rainy season started. Sometimes epidemics coincided with the influx of West Africa pilgrims into the country through Chad and Darfur areas. In 1998/1999, an outbreak of meningitis struck, claiming around 33,000 cases nationally.

2.5.3 Yellow fever

The geographic area of Yellow Fever outbreaks in Sudan lies within the tropics, located 15°N and 10°S, and normally characterized as rain forest area. Historically, the north edge of this Yellow Fever endemic area in Sudan, the Kordofan / Nuba mountains area and the Blue Nile area have been the hotspots of Yellow Fever epidemics. It was noted that the epidemics had a rural pattern, were often in areas annually infiltrated by cattle-owning nomadic tribes, and were also associated with the onset of rains and decreased when rain stopped. In 1940, a Yellow Fever outbreak in the Nuba Mountains affected an estimated number of around 15,000 cases with 1,600 deaths, with a 10% case fatality rate.

2.5.4 Measles

Measles was the most important cause of infant mortality in Northern Sudan and the most important cause of mortality from vaccine preventable diseases. Prior to the introduction of immunization, northern Sudan experienced large outbreaks on a regular basis with up to 75,000 cases and 15,000-30,000 deaths annually, according to immunization cMYP 2006-2010. There has been considerable decrease in disease incidence as vaccination coverage rates have increased. Approximately 40% of acute disease episodes occurred in children aged 5 to 15 years. Due to the existence of a susceptible child population and considerable population movements, measles still creates challenges for northern Sudan. The most recent measles outbreak in 2004, claimed 9,513 cases in northern Sudan.

2.5.5 Acute water diarrhoea (AWD)/cholera

Mass population movements, and environmental deterioration, if allowed to proceed unchecked, could result in serous ongoing epidemic situations for northern Sudan. Several instances demonstrated the impact that this disease has on the population. In the locality of Idd El Tin, the digging of a water
borehole tapped highly alkaline water. The water was wrongly speculated as supernatural water, which attracted around 30,000 people to sample the “holy water”, thus triggering an epidemic of acute watery diarrhoea. During the last decade (1994, 1998, 1999), floods have caused considerable AWD/cholera outbreaks.

### 2.5.6 HIV/AIDS

Little intervention had been conducted in Sudan to address HIV/AIDS before 2002. No PMTCT facility was established; even service to provide HIV/AIDS testing to pregnant women was inadequate. In 2002, a multi-state epidemiological and behavioural survey, conducted by the SNAP, drew concerns on HIV/AIDS situation in the country. This survey revealed a prevalence rate 1.2% nationally, with 1.1% in university students, 4% in sex workers and 4.4% in refugees/IDPs. Among positive individuals, 29.7% are woman.

### 2.6 Epidemic disease outbreaks during 2002-2006

In 2003 and 2005, there were noticeable outbreaks of measles, meningitis and Yellow Fever which attracted massive campaign response (Figure 1). In 2004, after 30 months retreat, polio came back through the border and spread to almost all states in northern Sudan, which triggered a nationwide catch-up campaign as well as SNID to control the situation. In the same year, measles struck affecting over 9,500 people. In the second half of 2006, acute watery diarrhoea/cholera emerged affecting 21,000 people and meningitis struck with almost 10,000 people affected.
Figure 1: Disease outbreaks, Sudan, Year 2002-2006

Meningitis in first half 2006: 9928 total affected, 857 Deaths

Measles in 2004, reported 9513 cases, 103 deaths
2.7 The underlying causes of child and maternal diseases

Maternal, infant and under-five deaths and malnutrition had a number of common underlying causes in northern Sudan. They included poverty and under-development, inappropriate health and nutrition services, conflict/emergency and female illiteracy. Other factors such as lack of family planning/child spacing, inadequate feeding practices, lack of hygiene and access to safe water contributed as well.

2.7.1 Poverty and under-development

In spite of newly found rich oil resources, Sudan is still considered to be a poor country that requires great efforts and investments for its development. The high demand for development is needed across all sectors: infrastructures like electricity, road building; basic transportations beyond donkeys/camels, basic communications such as telephone, as well as in service infrastructure such as postal, education and health services. Among them, education and public health have been far behind and often neglected. One would easily see the poverty and under-development present within 15-20 minutes driving from the centre of any state capitals of Sudan. During field visits, these areas were observed and characterised by thatched huts without running water or electricity access. These poor members of the population represent the majority, and hence to address their needs remains a challenging task.

It is worthy noting that Sudan is one of the fastest growing economies with GDP growth of more than 10% annually. With the rapid economy growth, the Government should raise its public expenditure on health and remain the most important source of financing for health sector, rather than depending on donors.

2.7.2 Inappropriate health and nutrition services

As described before, the overall health system has been very weak for decades, in terms of service delivery, accessibility and equitability, the number and proper distribution of health cadres and the quality of services provided. The quality of the service is also related to proper referral and supervision in the system, which is not optimally functional yet. Therefore, a continuum health package, provided during pregnancy, birth, the neonatal period, infancy and childhood was severely lacking in northern Sudan.

In relation to management of common childhood illness, among children who got diarrhoea, only 27.6% received ORS treatment. Only 22.5% of febrile children got appropriate malarial treatment such as chloroquine, according to MICS 2000 data. With respect to immunisation, MICS 2000 data indicated that approximately 64.5% of children aged 12-23 months received a BCG vaccination by the age of 12 months. The coverage for measles vaccine by 12 months was 51.5% in northern Sudan. There was a considerable drop out rate for the second and third doses of DPT and polio. The first dose of DPT and Polio was given to 65.9% and 74%, respectively. The third dose of DPT and Polio dropped to 46.2% and 44.2%, respectively. The percentage of children who had all eight recommended shots was only 26.4% in Northern Sudan.

As for Reproductive Health, the preponderance of health facilities in the health care system was not paralleled by offering the full spectrum of accepted RH services. On average, in 2002, less than half (43.6%) of all health facilities in Northern Sudan offered reproductive health services. Among them, only one third provided the full spectrum including EmOC.
2.7.3 Conflict / Emergency

There are three types of situations requiring attention and immediate support to prevent a public health emergency: 1) conflict; 2) drought/rains/flooding; 3) disease outbreaks. And these situations were experienced during 2002 and 2006, sometimes these situations coincided together.

Political unrest has lasted over 20 years in Sudan, starting since 1984. During 2002-2006 conflicts continued, though the signing of the Comprehensive Peace Agreement (CPA) in 2005 provided a glimpse of hope to the population. Conflicts have contributed to the influx of IDPs, which have required urgent aid assistance. Figure 2 presents an estimation of IDP populations in Northern Sudan in the year 2005.

Figure 2: Main distribution of IDPs and returnees, Northern Sudan, 2005
The conflict in the Greater Darfur region of the Sudan, which involved multiple actors, including the nomadic and settled communities, regular Sudanese army forces and Government-aligned militias (Janjaweed), rebel movements such as the Sudan Liberation Movement/Army (SLM/A) and the Justice and Equality Movement (JEM), has created a humanitarian crisis. The ongoing conflict has weakened the traditional coping mechanisms of the people. During the programme period, around one million war-affected persons in the area required urgent humanitarian assistance. Though international aids, including support from UNICEF, have been largely allocated to cope with the urgent needs of the area, the IDPs still live in a very difficult condition.

The ongoing conflict has also had effects on the governance, management and quality of international aid, as certain areas/tribes/camps have been inaccessible due to insecurity. This in turn has created a vacuum or gap to provide routine public health interventions such as immunisation, outbreak response, disease prevention and treatment. The political unrest in parts of northern Sudan, such as Darfur and South Kordofan, have had negative impacts on administration, governance and efficiency of action, since two or more systems/administrations were often running in parallels.

Since 2005, the after-conflict era, resulted in increased movements of returnees. This, in turn, created new challenges to services to address the relation to and the integration of returnees with local communities, as well as the needs for facilities (new or rehabilitation), and the distribution or redistribution of resources.

The three types of emergency situations were often interrelated in the past, as one often led to the other. The internal displacement of populations caused by conflict and natural disasters such as flooding, and the human movements due to drought/flooding, and resulting strain on public health services and inability to maintain adequate hygiene practices triggered frequent epidemic disease outbreaks, such as yellow fever, meningitis, AWD/cholera and measles leading to exhaustion of public health resources and management. Food insecurity caused by conflict or drought, or both, contributed to child malnutrition directly.

2.7.4 Child health is closely related to the education of the mother

19% of women with at least a high secondary education were using contraceptives compared with only 2% of illiterate women. These educated women were more likely to deliver a baby with the assistance of a highly skilled person, and to register the baby after birth. Interestingly, once an educated mother made the first attempt to register her child, the general welfare of the child was continuous. This was reflected in data that around 80-90% of vaccination coverage rate was among children who had birth registration. The drop-out rates, for the third doses of DPT and OPV, were lowest for children whose mother possessed a secondary or higher education.

The availability of universal education, if well managed, could have changed the prospects of the coming generations and improved the health status of future mothers, but unfortunately, this still remains a hope.
3. Objectives, Methodology and Timetable

3.1 Objectives

The objective was to carry out a comprehensive end of cycle evaluation for the health and nutrition programme within the context of UNICEF–Sudan Country Programme of Cooperation 2002-2006 to gain an understanding of the successes and failures during the implementation, draw lessons learned and make recommendations based on the findings. The evaluation was intended to establish an evidence–based policy making framework to influence all the forthcoming policies and strategies for effective learning and to assist in the future planning of the 2009-2012 country programme.

The scope of the evaluation, as specified by the Terms of Reference, is summarized below:

- Examine the programme design in terms of impact, objectives, and outcome and their relevance to addressing the causes of the health problems. Determine whether the programme has been in line with the needs of stakeholders and programme priorities. Examine important cross-cutting issues, such as women and child rights and gender equality and to assess to what extent these issues have been addressed in the health programme;
- Examine the programme and sector policies and strategies and their consistency, particularly those policies that are child-focused and address human rights in situations of emergencies. Review strategies and policies appropriateness;
- Assess the adequacy and effectiveness of the structures established and/or strengthened in support of the health and nutrition programme (including management, coordination mechanism and monitoring) and identify factors which have contributed to successes and/or weaknesses. Examine coordination mechanisms;
- Assess the extent to which the health and nutrition programme has achieved its objectives: achievements in terms of programme development objectives and key outcomes and outputs; Determine the achievements, progress towards the programme objectives, MDGs, UNDAF as well as outcomes of collaboration and joint programming with partner agencies;
- Impact: Assess the extent of the contribution of UNICEF assistance towards the achievement of the MDGs. Look at the wider effects of the programme – social, economic, technical and environmental on individuals, gender, children, and communities. Impact of short-tem and long-term can be of positive and negative effect.
- To the extent possible, assess the efficiency of key programme outputs (qualitative and quantitative) with a view to identifying relation between costs and results (including unit costs).
- Measure and assess the sustainability of service delivery to the target group. Identify the sustainability elements in terms of financial, human resources, social acceptance, operation and maintenance, cost recovery and environmental impact. In addition, assess the sustainability issues relevant to the key programme interventions and or structures supported/established for the implementation of the health and nutrition programme;
- Outline out the key lessons learned and innovations/solutions for the many challenges encountered in implementing the health and nutrition programme. Outline out the lesson learned could be applied to the development of the 2009-2012 GONU-UNICEF Country programme.

The Terms of Reference are attached as Annex 1.

The GoS-UNICEF 2002-2006 Country programme initially covered three accessed towns in the South. In line with 2005 CPA, the management of the South Sudan programme was separated from
the North. In 2005, to bring more attention and support on HIV/AIDS, the HIV/AIDS component was separated. The geographical scope of this evaluation, in general, referred to northern Sudan. At the project level, the evaluation covered mainly child health projects including malaria, EPI, nutrition, reproductive health including PMTCT.

3.2 Methodology

The following methods were used: desk review, key informant interviews, cost-benefit analysis, field visits and data analysis.

3.2.1 Desk review

A full range of documents related to planning and implementation, reporting, monitoring, reviews (including reports from field-visits), were made available for the review. The 2002-2006 Annual Work Plans and Annual Reports were the main documents reviewed, which described targets, provision of supplies and human resource capacity building activities in the three components of the programme, and the yearly progress. The routine, quarterly reports/reviews were utilised to examine the routine monitoring and delays experienced during each year. The programme policy and strategy plans were reviewed to example the appropriateness and coherence. Additional documents used included assessment and evaluation reports, 2006 Sudan Household Health Survey, 2000 MICS survey, 2005 Malaria prevalence and coverage survey, and several other assessments conducted by the UNICEF and Ministry of Health and partners on malaria and immunization activities. A complete list of documents utilised is provided for reference.

3.2.2 Key informants interview

Interviews were conducted with key national and state programme officers. At federal level discussions were conducted with the Assistant Under-Secretary for Planning, Policy and Research, Assistant Under-Secretary for Preventive Medicine and Primary Health Care, the Director General of International Health, the National programme managers of EPI, IMCI, RH, Nutrition and Malaria. At the State level, the Directors General of SMOH and State coordinators and managers of EPI, IMCI, RH, Nutrition, Malaria and CFCI were interviewed. The focus of these interviews and discussions was on assessing the management (administrative and financial) of the health and nutrition programme and the impressions on the achievements of the programme.

The programme had multiple partners and stakeholders, including communities to whom the programme interventions were intended. The Federal Ministry of Health was responsible for development, implementation and monitoring of the health and nutrition programme. Other key partners included UN agencies such as WHO, UNFPA, and other stakeholders. It was important to look at the partnerships of the programme and understand their strengths, and weaknesses. Therefore, key informants interviews were conducted with programme officers from UN organizations, international and national NGOs, as well as the community beneficiaries. Some of the interviews were conducted during field visits. A semi-constructed questionnaire was used to guide the interviews and discussions. The interviews were mostly conducted one by one, but were also conducted and combined with group discussions particularly at programme level.

The comments on programme partnership, objectives, obstacles and constraints, contributions, issues such as sustainability, policy, strategy and planning, implementation, coordination and communication, reporting, monitoring and supervision, as well as suggestions, were obtained during interviews with key informants guided through the questionnaire. Though the key national and state informants are mostly programme managers or officers with fair understanding of the collaborations between UNICEF and the country, some of them are newly assigned and were lack of information on
the events on the previous programme cycle. Group discussions with UNICEF programme officers were conducted afterwards to discuss the comments and issues raised during interviews, to fill in the gaps.

Community beneficiaries such as women and children were interviewed during household visit. With permission from the chief of the village, female interviewers were allowed to visit the village huts. Normally women and children presented in the house at the time. The condition of the huts was examined. The interviews with the women and children beneficiaries (in this study, chosen conveniently during huts visit), focus on the means of living, children status and welfare, the availability of the health service, immunisation and common disease treatments.

3.2.3 Cost-benefit analysis

The cost-benefit evaluation was challenging since the programme had multiple partners. The important periodic data on financial expenditure linked with outputs was inconsistently completed to sufficient detail. Efforts were made to collect additional cost data at Federal, State and Facility level. Though some information was collected, in most cases it proved to be fruitless in terms of the details and quality of the information.

In the end, available child health costing data was used, to undertake cost-benefit analysis in key programme components such as immunization. Since the programme had multiple partners, estimations and assumptions were used to analyze the cost, to differentiate the contribution of UNICEF. As in many programmes, it was difficult to determine the exact outcome/impact of programmes attributable to UNICEF. On the other hand, regarding the extent of support, the feedbacks from the National counterparts was that UNICEF was a major contributor to Sudan’s routine immunization service and its coverage achievement. The cost of immunization was recalculated with an attempt to breakdown the routine immunization cost, the supplementary immunization cost, the recurrent cost of both services, and the capital cost of the immunization service, based on the cost of the child health data. The cost, matched with the output, were analyzed, the unit-cost was presented as well.

3.2.4 Field visits

GoS-UNICEF 2002-2006 health programme had 9 focus states, and health and nutrition interventions were conducted in the states and localities. Observation of the local situation, programme accomplishments and interaction with the local population was an important part of the evaluation of the implementation of the health and nutrition programme at State and Locality levels. Three states were visited, Kassala to represent the East, South Kordofan to represent the transitional states, South Darfur to represent the West.

The primary health unit was a key health facility that was visited, since it constituted the backbone of public health infrastructure in Northern Sudan and provided an obvious site where UNICEF had inputs in the primary health system. The GoS-UNICEF 2002-2006 programme implemented key strategies, such as focus on service delivery and community empowerment, and selected the most disadvantaged communities (CFCI communities) to deliver UNICEF’s support. Following consultation with programme officers in the health and evaluation sectors of UNICEF Sudan Country Office, one CFCI community and health facility available to that community was visited in each of the three states, Visits to one nearby non-CFCI community were conducted for comparison. Interaction with community leaders, was undertaken, as well as visits to some households (one relatively wealthy, one poor) to interact with beneficiaries such as women and children to gain an understanding of their views, and social and culture backgrounds. The observations during field visit were described in the findings.
Three days were arranged in the field, with Day 1 and/or Day 2 comprising discussions with key state stakeholders, and Day 3 spent on community and community health facility visits.

Due to the distance and time limitation of each visit, as well as security concerns in some areas, the selection of the CFCI community was not random. The CFCI community selected was generally a disadvantaged area and relatively close to the city (though some required more than two hours driving time from the city during dry season).

A semi-constructed questionnaire was used to collect information and comments and a set of data collection instruments targeting State and Facility level was used to collect quantitative information.

### 3.2.5 Data collection, verification and analysis

Attention went primarily to available data before attempting to collect data at the Federal, State, and Facility level, so as not to duplicate the data collected by targeting different levels of the programme on specific information.

Available data from routine reports and population surveys was analyzed first. The available data and indicators had various problems on quality. An extra section was added to comment on data quality, followed with some suggestions to improve quality in the future.

During data analysis, a set of indicators output/outcome/impact indicators were chosen based on the initial plan and internationally recognized guidelines. The available routine data, the reported data and the population data were cross-checked. The field visits were used to collect additional information for further verification.

To examine the outcome and impact, population survey data were given higher credit, based on consultation with peer professionals, observations from field visits, and the limited choice we had.

MICS 2000 and SHHS 2006 data were used, as well as programme surveys such as the Malaria survey 2005. As some of these surveys were conducted during periods when boundaries were different. (In instances, boundaries included a few selected towns of the South), we had to re-analyze the survey data to obtain northern Sudan results. To closely examine the trend and situation in the focus states, a state by state comparison was conducted (Annex 2). States like West and South Kordofan which existed in 2000 were aggregated to compare the newly created South Kordofan state in 2006. The method of allocation was inexact as parts of West Kordofan were assigned to North Kordofan, and the rest went to South Kordofan.

### 3.3 Timetable

The timetable of the consultancy period was divided into three phases: phase 1, devoted to preparing and obtaining needed information through the desk review and interviews; phase 2, devoted to field visits; phase 3, was for data validation and report drafting. For details of the timetable see Annex

### 4. Findings

#### 4.1 Programme Design and Management

#### 4.1.1 Programme design: the goal, targets, and indicators

The overall goal of GoS-UNICEF country programme 2002-2006 was to assist the Government in its obligation as set out under the Convention of the Rights of the Child, to protect and promote the
rights of children to survival, development, protection and participation. The objectives of the GoS-UNICEF health programme 2002-2006 were:
a) to reduce child mortality, morbidity and malnutrition;
b) to promote the protection of the most vulnerable groups;
c) to develop a peaceful environment conductive to the realization of children’s and women’s rights.

The GoS-UNICEF health programme 2002-2006 was comprised of three projects:

- EPI
- Integrated Child and Maternal Health
- Healthy Growth and Nutrition.

The main outcome indicators proposed in each project and their targets by year 2006 are listed in Table 1.

**Table 1: Key indicators and targets proposed according to 2002-2006 MPO**

<table>
<thead>
<tr>
<th>Proposed indicators</th>
<th>Outcome targets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project 1: EPI</strong></td>
<td></td>
</tr>
<tr>
<td>• Polio</td>
<td>Eradicate</td>
</tr>
<tr>
<td>• Routine immunization for each of six killers</td>
<td>90%</td>
</tr>
<tr>
<td>• Number of neonatal tetanus case: &lt;1 per 1000 live birth)</td>
<td>&lt;1 per 1000 live birth</td>
</tr>
<tr>
<td>• Introduce new vaccines Hepatitis B, Haemophilus Influenza B</td>
<td></td>
</tr>
<tr>
<td>• Strengthen collaboration with major partners</td>
<td></td>
</tr>
<tr>
<td><strong>Project 2: Integrated Child and Maternal Health</strong></td>
<td></td>
</tr>
<tr>
<td>• Coverage of children U5 receiving minimum care</td>
<td>80%</td>
</tr>
<tr>
<td>• Coverage of CBAW receiving minimum antenatal care from skilled personnel</td>
<td>80%</td>
</tr>
<tr>
<td>• Coverage of pregnant women and children under five using insecticide-treated bed nets and have access to the appropriate management of malaria.</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Project 3: The Healthy Growth and Nutrition</strong></td>
<td></td>
</tr>
<tr>
<td>• Coverage of household iodized salt use</td>
<td>80%</td>
</tr>
<tr>
<td>• Coverage of vitamin A supplementation in children (6-59 month)</td>
<td>80%</td>
</tr>
<tr>
<td>• Coverage of Iron supplementation for pregnant women</td>
<td>80%</td>
</tr>
<tr>
<td>• Reducing moderate and severe malnutrition</td>
<td>By 50%</td>
</tr>
</tbody>
</table>

In addition to the main indicators above, the 2002-2006 PPO (Programme Plans of Operation) of the Government of the Sudan and UNICEF gave an exhaustive list of indicators for each project outcome. However the targets on some were not proposed, and some targets were not tracked and reported on at the end of the programme cycle.

The Programme was designed to reduce child mortality, morbidity and malnutrition and protect and promote the rights of children and vulnerable groups, but there were no impact targets related to reduction of child mortality and maternal mortality, though the country eventually adopted the MDG.
goals as the targets.

The objectives of the programme were very much aligned to the needs of North Sudan, and in line with the mandate of the UNICEF on protecting and promoting the rights of children to survival, development, protection and participation. In fact, during the design and planning of the Programme, UNICEF had pursued a strategy of joint process of strong participation and consultation with government at the Federal and State levels, followed with joint periodic reviews to ensure the urgent needs and priorities were addressed. This process largely ensured that the programme reflected the needs of the key partner, GOS, and was well recognized as an example of close and productive partnership.

There were many partners with whom UNICEF was working, categorized into the following groups: the recipient government, donor governments, UN agencies (namely WHO, UNFPA, WFP), NGOs, and local communities. The main stakeholder for UNICEF-GoS country programme was GoS. The majority of funding of UNICEF-GoS 2002-2006 was raised by UNICEF itself. In some instances, funds provided had restrictions. For example, some funds were specified to support rehabilitation of health facilities, though on the ground the influx of returnees required new facilities and some deteriorated facilities were not a priority to rehabilitate, since the population had moved. To make sure the needy, vulnerable population were served in a timely manner, UNICEF made noticeable efforts to use a balance and fair approach to resource distribution and to be flexible to ensure timely support.

The three components of the Programme: the EPI project, Integrated Maternal and Child Health project, and the Healthy Growth and Nutrition project were targeted to achieve 90% coverage of routine immunization; 80% coverage of minimum care to children and pregnant women; 80% coverage of iron, vitamin A supplementation and iodized salt use within pregnant woman, U5 children and households respectively, and 50% reduction of malnutrition rates. Though some of the targets were ambitious at the time, they tended to tackle the fundamental child health problems in northern Sudan.

EPI indicators were the mostly clearly defined indicators, but some of them were not equally specified. In addition to outcomes indicators, process indicators were also needed to track periodic progress. There was no well laid plan at the beginning of the programming cycle regarding (i) continuous data collection, (ii) frequency of data collection, (iii) body responsible for collection, (iv) collections forms to be used, and the (v) verification of data collected.

For example, some indicators were designed to measure the coverage in the focus states, but were reported inconveniently as nationwide, or statewide, or locality/communitywide values. There was not consistency in application of indicators. In some instances, indicators were reported as a number, others as a percentage, and as an estimation, though it was not possible to determine how it was estimated. Since the administration was continuously changed (at Federal, State and Locality level, and at International level), and there were also population changes through movement (IDPs and returnees), number or boundary change on states or localities, lack of consideration of these changes at the beginning of the programme made the tracking, checking and reviewing the periodical progress difficult.

Another example of ambiguity of the indicators is evident in the final objective of reduction of malnutrition of 50% among children in the focus state. It was not clear from the beginning if/how 50% reduction could be achieved and if it was realistic. Though there were surveys and community monitoring conducted during 2002-2006, there were no plans on information use and therefore the information seemed not to inform further intervention. Though the nutrition programme mentioned that the intervention should be comprehensive, not just a problem of supplementary feeding, it did
not tell what comprehensive exactly meant, except for vitamin A to children through NIDs, iron supply to pregnant woman through campaign, iodized salt to households through policy enforcement.

4.1.2 Program strategies

The GoS-UNICEF 2002-06 programme pursued the following broad strategies to achieve the main objectives of the programme.

Strategy 1: Child rights and peace building
This strategy formed the normative framework for all interventions. All components of the programme provided a base for protecting child rights, promoting conflict resolution and grassroots peace building. Examples included: the selection of intervention communities with a view to furthering rights protection and peace promotion; education and information activities in support of these priorities, and strong national partnerships and alliances across all sectors in support of children’s and women’s rights.

Strategy 2: Focusing on needy areas
In addition to the focus states, the programme covered also the non-focus states with respect to projects of national thrust (EPI, emergency response, malaria HIV/AIDS and micronutrient supplementation).

Sector field interventions and community-based initiatives of the programme converged on the most disadvantaged states and communities.

Firstly, key indicators from MICS 2000 and SMS 1999, including infant mortality, child mortality, maternal mortality ratio, literacy, female literacy, primary school enrolment, Immunisation coverage, malnutrition rate, access to safe drinking water, clean safe delivery, HIV/AIDS knowledge, etc., were used to rank and select nine “focus states” as the most vulnerable in northern Sudan (Figure 3). Red Sea state was added during the programme cycle. UNICEF zonal offices were strengthened to assist and monitor implementation. The population in the combined focus states was estimated between 13 -15 million at the time.
The details on the ranking of each state are shown on Annex 3.

In a second tier process of selection, vulnerable communities within the focus states, based on similar criteria, but reduced list of indicators were identified. The indicators, in general, fell into categories related to service delivery in education, water, and primary health sectors. They indicators respectively were primary school enrolment, girl primary school enrolment, school drop-out; % of population safe water access; population per midwives and trained TBAs, population per trained health cadres.

At this level of selection, 54 of 178 localities in the focus states were identified first. In total 300 communities in these localities were identified as most disadvantaged for implementation of the Child Friendly Community Initiative (CFCI), an approach to converge UNICEF supported programmes across sectors. During the programme cycle, CFCI expanded with the addition of more communities. Figure 4 provides an example of the second tier selection process.
Strategy 3: Emergency preparedness

Plans were developed and maintained to enable rapid response to acute emergencies. To ensure optimal utilisation of resources, as well as donor contributions for emergency situations, resources were allocated within a consolidated Country Programme, which has been developed to accommodate such situations. Each of the sector programmes maintained the capacity for rapid response to emergencies with prepositioned essential supplies and trained personnel to deliver services.

Cross-cutting issues such as gender mainstreaming, youth participation and behaviour change communication were addressed in the health programme. For example, women were involved in communities to promote services to women and girls and to remove any barriers that would hinder extending programme activities to cover their needs.

At the project level, service delivery, capacity building, community empowerment, advocacy, were used to achieve the specific objectives of each project.

4.1.3 Relevance of programme strategies

In general, the programme adapted a strategy to target the causes and roots of health problems, empower the key national partners to ensure ownership of the program and its ultimate sustainability. The strategy was in line with Sudan national policy, and major frameworks such as the Sudan MTSP (2002-2005) and UNDAF (2002-2006).

Child rights and peace building were a central framework, used during conflict and post conflict situations. Negotiations between UN, participants from diverse parties in Sudan and other international/national bodies, have been used to create a ceasefire or a temporary peace to enable international aid to move in, such as the humanitarian access gained under the Operation Lifeline Sudan Agreement in the past. In relation to the UNICEF health programme, this strategy was used in conflict / unstable areas such as Darfur and South Kordofan. By providing essential EPI service to children in those areas that had long been neglected due to insecurity, the national coverage of immunization for polio and measles, were maximally pursued in a difficult political environment.
It is worthy noting that the services provided jointly by WHO and UNICEF during the created ceasefire opened subsequent opportunities for further ceasefires in other areas.

All the three projects had strategic components of advocacy, service delivery capacity building, and community empowerment. Advocacy at top level with promoting policy change were certainly put in place as a long-term perspective into programming to secure its continuous direction. It helped to address the silence, stigma, and long-term held traditions on issues such as HIV/AIDS, female genital mutilation/cutting, integrating midwives into health system, family planning, etc.

Service delivery and capacity building were emphasized to achieve the targets and most importantly, they answered one of the important causes of health problems in the country – the poor health system. The service delivery supported from UNICEF was at all levels, for example in EPI, it included provision of vaccines, cold chain equipment and supply; in IMCI, it included provision of mosquito nets, PHC kits, midwifery tool kits, equipment and rehabilitation of health facilities, etc. The capacity building component was also designed to support all levels, from Federal, to State, to the service providers such as vaccinators, as well as programme managers.

The emergency strategy was very compatible with the circumstances and was comprehensive, in terms of fund raising, priority and level of the support and the describing coordination mechanisms. The emergency response package UNICEF designed was to deliver shelters, as well as providing PHC kits to displaced populations in a short time frame. There was also a continuous learning and revised strategy through applying lessoned learned by controlling future disease outbreaks of AWD/cholera, polio, measles, etc. The emergency strategy was so well worked out that sometimes host communities as well as neighbouring communities were seeking help and service in IDPs camp, because there was no service or only poor service available in their own communities. This was observed during the field visit.

UNICEF focused its strategy and resources on those in most need to ensure the most disadvantaged states were prioritized and served first. The interventions of the strategy were to be integrated so that all sectors efforts could converge to contribute to a positive impact. This strategy was well in line with the mandate of the organization of protecting the most vulnerable.

By targeting selected localities and focusing on areas not easily reached, supplementary immunisation campaigns were an effective strategy to increase immunisation coverage and to reduce the pool of susceptible children so that major outbreaks could be prevented. CFCI provided a positive approach to achieve the following benefits; foster social mobilisation to facilitate immunisation, to break stigma, to promote healthy behaviour and community health, to identify health cadres, such as young girls that could be trained as midwives, and to raise the awareness and participation of the community in programme implementation. This was observed during our field visit.

Some constraints were identified during programme implementation in CFCI communities. Access to CFCI communities in remote areas or conflict zones was difficult. During interviews, it was commented that some isolated communities were lack of capacity and willing to change, for example, unwilling to send young girls for one-year midwifery training, etc. Therefore, the quick-win was not easily achieved, and often the positive effects of the “model” community on the neighbouring community were not easily established. Regarding primary health care issues such as health facility establishment, health cadre training, installation, supervision and coordination, the division of responsibilities and the coordination between state CFCI and SMOH needs to be further clarified and strengthened.
4.1.4 Partnership and Coordination

In northern Sudan, the main partners of UNICEF in health and nutrition sector were WHO, UNFPA, WFP, and NGOs. The programme and focus of WHO, UNFPA, WFP, UNICEF are listed in Table 2.

Table 2: UNICEF’s Main UN Partners, the Programme and Focus States

<table>
<thead>
<tr>
<th>Organization</th>
<th>Focus States</th>
<th>Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>WFP</td>
<td>West Darfur, North Darfur, South Darfur, Abyei, Blue Nile, South Kordofan</td>
<td>1) Emergency operation: food rations, Supplementary and therapeutic feeding, school feeding; 2) Country programme: school feeding and Food for Work; 3) Humanitarian Air Service.</td>
</tr>
<tr>
<td>UNFPA</td>
<td>States other than North Kordofan, Red Sea, South Darfur</td>
<td>1) Midwifery training; 2) Reproductive Health related issues such as maternal care, family planning, HIV/AIDS, Female Genital Mutilation; 3) Provide RH related medical equipment and supplies such as : Midwifery kits, Iron/folate tablets, C.S sections kits, condoms, oral mechanical and inject able contraceptive, drugs for treatment of STIs and instrument for the management of emergency obstetric cases.</td>
</tr>
<tr>
<td>UNICEF</td>
<td>All, with programme focus on nine states, reproductive health programme on North Kordofan, Red Sea, South Darfur</td>
<td>1) IMCI including malaria; 2) EPI; 3) Reproductive health; 4) Nutrition; 5) HIV/AIDS such as PMTCT; 6) Emergency; 7) Cross-cuttings such as child right, gender, etc.</td>
</tr>
</tbody>
</table>

Meetings, MOUs, and frameworks such as UNDAF, were utilized to enhance effective collaboration and avoid duplication between organisations with UNICEF. For example, periodical meetings were conducted by UNICEF to share its AWP and build consensus with WHO, develop a MOU with WFP on aspects of its nutrition programme implementation and jointly support NGOs on implementation, avoid duplication and share training at the midwifery school with UNFPA.

In each programme component, such as EPI, IMCI, malaria, and nutrition, specific partnership frameworks, for example, Roll Back Malaria and CCM, were used as coordination mechanisms (Table 3). Coordination meetings were held, though often on an irregular basis.
### Table 3: Partnership and Framework in Each Program Component

<table>
<thead>
<tr>
<th>Partnership Framework</th>
<th>UN</th>
<th>Government</th>
<th>Alliance</th>
<th>NGOs/Private Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPI</td>
<td>ICC, Emergency Health and Nutrition coordination committee</td>
<td>WHO, UNMIS, WFP, UNICEF</td>
<td>MOH EPI department</td>
<td>Rotary international, CDC, GAVI</td>
</tr>
<tr>
<td>IMCI</td>
<td>IMCI strategy, HAS/BI Policy and CFC Initiative</td>
<td>UNFPA, WHO, GF, UNICEF</td>
<td>MOH</td>
<td>INGOs including Maltese, GOAL, MERLIN, FAR, MedAir, MSF-France, CRS, SC-US, Tear Fund, WVI, NCA, Enfants du Monde; and Local NGOs including GHF, El Manar, SUORRD, SCC, SUDRA.</td>
</tr>
<tr>
<td>Nutrition</td>
<td>Nutrition Coordination committee</td>
<td>WFP, UNICEF</td>
<td>MOH Nutrition department</td>
<td>Action Contre la Faim (ACF), Aide Medecale Internationale (AMI), ARC, WVI, Tearfund, Merlin, Goal Ireland, MSF, Care International, NCA, AMA and, RI, GOAL, Concern, Tearfund, SC-US, WRI, IMC</td>
</tr>
<tr>
<td>Malaria</td>
<td>Malaria, CCM, NGO Forum</td>
<td>WHO, GF, UNICEF</td>
<td>MOH Malaria department</td>
<td>Plan Sudan, Malaria Consortium, DAN, Financial and Investment Bank, Canar, Coca Cola, Kenana Sugar Cane, Gazera Scheme Board</td>
</tr>
</tbody>
</table>

In general, the above mechanism was able to ensure the resource gap was identified and filled and to avoid duplication, though during programme implementation on the ground, coordination between organisations remains an area to be further improved. A timely communication mechanism would help, particularly in conflicting or transition states where the turn-over of human resources was rather more frequent.

#### 4.1.5 Programme Management

The foundation of the UNICEF program was to assist the country government. stakeholders such as Federal and State governments, and NGOs, who primarily implemented interventions. Due to the large scale and dimension of its support and the complex nature of its partnership system in the country, UNICEF shouldered multiple functional roles. In addition to capacity building and technical support, its roles included fundraising, fund allocation and liquidation, supply ordering and delivery coordination, reporting, joint monitoring, joint review and evaluation. Figure 5 illustrates the guided procedure which UNICEF performed in its multiple functional roles with its partners.
The work started by developing the programme plan, normally a five year plan or agreement, is then translated into an Annual Work Plan (AWP). The AWP was jointly developed by UNICEF and government, and then endorsed formally by GoS, usually by 31 of March.

During 2002-2006, there were three types of funding resources to support the GoS-UNICEF Northern Sudan program: (i) RR (Regular Resource), (ii) OR (Other Resource), (iii) ER (Emergency Resource). The RR was supposed to support the key priorities of each programme component and to maintain the current status. The OR and ER were resources raised by UNICEF through its fund raising and other activities. The donors were primarily governments of developed countries.

UNICEF sent proposals to potential donors to raise OR/ER funds to support its activities under the AWP. In its responsibilities to remain accountable to its donors, UNICEF sent yearly reports (approximately 50 donor reports done annually) to each donor outlining funding utilisation. Fund raising and fund allocation activities were conducted throughout the year.

The GoS-UNICEF fund allocation and programme implementation activities were guided by AWP. As part of the implementation process, UNICEF and government conducted a quarterly review process to assess programme progress and to prioritize future activities according to the availability of funds and the situation on the ground. The zonal project officers and the leading government institutes were part of the review process. A joint decision and recommendation on activities to move forward were made after the review. This elaborate, integrated, and field-oriented process had a great fit to the beneficiary’s needs, as well as to enable flexibility to adjust activities based on the capacity on the ground. From the field visits conducted, it was noted this process was highly appraised during our interview with stakeholders.
Figure 6 illustrates the UNICEF programme cycle. An ideal annual program cycle would be that the implementation started on first quarter, then followed with routine monitoring, review, and reports. The reality during 2002-2006 was rather difficult and sometimes very challenging due to shortage of funds in the face of an emergency situation, particularly in 2006. The funds were late, often only reaching the organisation during the second quarter, or even third quarter, leaving one quarter only to finish the activity hurriedly and meet the end of year review. Some activities of the AWP had to be dropped. Nevertheless, the neediest among the needy, such as those in Darfur areas were maximally looked after during the programme cycle. This was observed and commented on by professionals during the field visits.

Lessons were learned during the programme cycle. Recently, the situation was greatly improved by planning early, proactive fund raising, rapid disbursement of PBAs to programmes, standardisation of forms, training the counterparts, and decentralization of management.

The request and cash liquidation was a routine management process during implementation. UNICEF also standardised the forms for requests and liquidation of cash assistance, which improved the accounting for and liquidation of cash assistance. UNICEF Sudan Country office continued providing training on the procedures involved in the requisition for cash assistance and supply inputs and liquidation of cash assistance to government counterparts and NGO partners on a regular basis.

UNICEF also made efforts to enhance the dynamics of the operations and associated controls by empowering zonal offices and providing them with the tools required for an efficient programme and humanitarian delivery. For example, decentralization of the CAG liquidation process to Zonal Offices while maintaining accountabilities.

Zonal offices appreciated the decentralization process and liquidation system. But at UNICEF Country Office, the cash allocation and liquidation was met with great complaints. The liquidation was very time consuming, particularly at the end of the year, since the Federal level was not capable of processing it. The re-allocated cash money to State level made the process complicated. It is considered that further decentralization, improvement on financial budgeting liquidation would help reduce the work burden.
2.2 Sudan Health/Child Health Related Policies and Strategies

The programme attempted to reinforce implementation of internationally recognized strategies, intervention and best practices and to develop its own policies and strategies. UNICEF provided support in the development of some of the key policies and strategies, such as the five-year Health Strategic Plan, a National Health Policy, a Child Health Policy, EPI five-year plan, Nutrition Policy, etc. A summary of sixteen different policies and basic strategies and interventions adopted during the Programme period is given below:

4.2.1 25-Year Strategy for Health, 2002-2027
This strategy sets the scene by describing its mission to provide health care that will enhance the quality of life of all citizens, permit them to lead socially and economically productive lives, provide them with assistance to meet their basic health needs and to reduce their suffering. The policy set priorities for the 25-year plan period. Future strategic directions were spelled out and 8 specific goals were noted to be achieved.

4.2.2 The MDG Five-Year strategy, 2007-2011
This strategy, directed to achieve the MDGs, was based on the 25-year strategy. The strategy supports guiding principles such as PHC approach, health for development, sustainability and equity, capacity building, health to enhance peace and reconciliation, pro-poor health care financing, and the comprehensive concept of health.

4.2.3 National Health Policy 2007
The National Health Policy was formulated within the context of the Comprehensive Peace Agreement and recognized the opportunities it created to support economic growth in the country. The policy was framed in line with promoting and institutionalizing a decentralized federalist system in the country. Furthermore, this policy drew from and built on the 25-year strategy for health and other existing policies.

4.2.4 FMOH Health Facility Description and Renaming Policy 2007
This policy adopted changes in the structure of the health service to upgrade health care delivery by PHC services. The minimum acceptable facility level for health services provision was adopted as the Basic Health Unit (BHU) which is structured and staffed to deliver the essential package of PHC services. PHC units and dressing stations were considered below the minimum standard, and were recommended to be upgraded to become BHUs.

4.2.5 National EPI Plan 2006-2010
Sudan is committed to all global strategies on immunization which are guiding its multi-year EPI plans. Immunization of children against vaccine preventable diseases of childhood is a strategy followed the world over and recommended by all health related international development agencies, including UNICEF and WHO. The new Global Immunization Vision and Strategy (GIVS) was adopted by GOS. By 2015, Sudan is committed to GIVS' overarching goals of coverage, access to new vaccines, mortality and disease reduction and sustainability and systems strengthening. The Sudanese ICC had approved the five-year National EPI plan of Action 2001-2005 for measles mortality reduction in October 2002. Sudan was not categorized as one of the polio endemic countries, according to the Global Polio Eradication Initiative Strategic Plan 2004-2008. Since 1994, Sudan has adopted a NIDs campaign approache. The National EPI Plan 2006-2010 has been currently been adopted.

4.2.6 Integrated Management of Childhood Illnesses (IMCI) 1994
This is a strategy implemented in nearly 80 countries around the world and since 1994, GoS has adopted it into its health care system. The Programme has carried on with the IMCI strategy.
4.2.7 National Child Health Policy 2008
This policy stipulated its objectives as setting long-term, outcome oriented directions and priorities for child health development; establishing coordinated and collaborative mechanisms and strategies to enable convergence of sectoral inputs to serve child development; committing financial and human resources and ensuring access by all children to a sustainable, complete and flexible continuum of quality and effective health services.

4.2.8 National Nutrition Policy and Key Strategies (NNP) 2008-2012
The overall purpose of this policy is to define a framework through which available technical, human, and financial resources may be mobilized in order to ensure the health and nutritional status of all Sudanese citizens is significantly improved. The policy stipulated the strategies to prevent chronic malnutrition, acute malnutrition, micronutrient deficiency disorders (MDDs) and obesity.

4.2.9 ICPD Package for Maternal Health 2002
There was no clear strategy on RH at the start of the UNICEF programme in 2002, but the programme was guided by the ICPD package for maternal health. The programme triggered the design of new strategies on RH.

4.2.10 Sudan Reproductive Health Strategy (2006-2010)
The overall objective of the strategy for Reproductive Health in Sudan is to accelerate progress towards meeting the Nationally set and Internationally agreed RH targets (as per MDGs) and ultimately to attain highest achievable standard of RH care for all population.

4.2.11 Sudan National Reproductive Health Policy 2005
The policy pledges that RH services are basic elements of PHC and are to be provided in all health facilities, and to be made affordable, accessible and acceptable to all citizens. It emphasize quality services such as ANC, skilled birth attendance, PNC, EmOC, anaemia screening, etc. Safe motherhood, family planning, STIs and HIV/AIDS focusing on VCT, Adolescent RH, and harmful traditional practices, were identified as priorities.

This newly developed strategy addresses decision makers/planners at Federal level and State level and managers and service providers (public and private) at Local level

4.2.13 UNAIDS recommendations on HIV/AIDS 2002
The Programme adopted UNAIDS recommendations for the control of HIV/AIDS before adopting its own policy.

4.2.14 National Policy on HIV/AIDS 2005
A National strategy to control and prevent HIV/AIDS was launched to confront the threat of HIV/AIDS in Sudan. Key international partners including UNICEF, UNDP, WHO, and UNAIDS, have coordinated their work together under the umbrella of SNAP. The National Policy on HIV/AIDS reflects GOS’s full commitment to prevent the spread of HIV/AIDS before it flares up into an epidemic.

4.2.15 National Strategic Plan for Roll Back Malaria (RBM) 2006-2010
Sudan adopted the Roll Back Malaria strategy as recommended by WHO and development partners and utilised it to develop its own strategy. The overall goal of RBM in Sudan is to facilitate human development and poverty reduction by reducing the malarial disease burden.

4.2.16 Malaria Drug policy 2004
The new treatment protocol for malaria outlines three treatment policies related to treatment of a simple malaria case, a severe malaria case, and a malarial case during pregnancy.
4.3 Programme Results and Achievements

As regards health and particularly child health, UNICEF is the key partner of the Sudanese government in terms of fund provision, the efforts made to raise funds, the level of support to implement services, and to support coverage of service/activities on the ground. This was well recognized by the Federal counterparts. The organization is well known in the country, even among the ordinary people.

Because of the strong capacity and influence of raising support for the child, the NGOs and other partners actively sought collaboration with UNICEF and urged UNICEF to do more.

Among the programme components, EPI, malaria and emergency support were highly praised. The next section focuses on the programme results and achievement.

4.3.1 EPI

Support from UNICEF on EPI and its achievements was very much in line with its logic framework. The inputs from UNICEF had been comprehensive: it supported a National strategic plan to enhance advocacy at the top; it also made use of communities, such as CFCl communities, to mobilize participants at the bottom; it provided vaccines, cold chain equipment to expand and strengthen service delivery; it trained service providers and managers; and jointly monitored implementation of services.

The inputs had resulted in the outputs and the outcomes (Figure 7), though some outcomes were a joint effort between UNICEF with key players including WHO, GAVI and GoS.

Figure 7: UNICEF EPI Input-Output-Outcome Matrix, Sudan, 2002-2006
In terms of outcomes, the achievement included two inter-related levels: Outcome 1 is the achievement in terms of routine immunization services provided to the infant before his or her first birthday. The improvement of routine immunization service was outstanding. The coverage of DTP3, for example, increased from 70% in 2002 to around 85% in 2006 (report data). The population survey data has indicated a lower coverage compared to the report data. Nevertheless, the improvement was distinct, from 40% according to MICS 2000 data, to 66% according to SHHS 2006 data.

Expansion of fixed vaccination sites, and the implementation of accelerated vaccination in approximately 63 hard-to-reach communities, as seen by the RED (Reach Each District) strategy, was successful. As a result, the localities with more than 80% DPT3 coverage increased from 22% in 2002 to around 80% in 2006, the percentage of localities with less than 50% DPT3 coverage dropped. Except for West and North Darfur, all states in the northern Sudan reached more than 80% coverage.

Outcome 2 resulted from the supplementary immunization service. Though most supplementary immunization was through campaign operation, outcome 2 benefited from the improvements of the routine immunization service. Improvement of routine immunisation buys time for a quick and more efficient disease outbreak response, which was illustrated in emergency response section.

Polio control was very promising at the beginning of the 2002-2006 programme cycle, due to the great efforts and successful implementation of 2 polio NIDs per year before 2003. The non-Polio AFP rate had reached 1.5 to 2.4 per 100,000 in 2002. In 2003, there were only SNIDs. Polio transmission was interrupted for three years until May of 2004. Unfortunately, though in early 2004, a supplementary polio campaign was initiated to reach the hard-reach areas, the loose border control somehow brought the first case in May 2004, and ended Sudan’s polio free status. To prevent further transmission, UNICEF and its partners responded with a SNID in the Darfur area and followed with two NIDs before 2004. The next year 2005 saw more fierce NIDs campaigns (3 NIDs in the year) to control the situation. The last of polio was seen in June of 2005.

Then after almost three years’ rest, the virus fought back again. In 2007 and up to October 2008, there were more reported cases in the country. The battle between polio and mankind was exhausting, but it is still positive, with the stronger commitment and determination from our side, polio should be defeated eventually as seen from other countries where polio was eradicated.

Measles was very challenging in the early years during 2002-2006 programme cycle. Routine immunization and supplementary immunisation in risk areas had been adopted first as a strategy to control measles. Outbreaks were seen in Kassala and Unity in 2003. In 2004, a measles campaign was implemented in the East. As a response to reported cases in Darfur, the IDP camps were targeted and supplementary immunisation was put in place. However, this was not enough. Then phased national catch-up campaigns, starting from the Darfur area, then to the rest of the sates, were conducted during 2004 and 2005. Almost 10 million children aged less than 15 years old were covered. The effect of immunisation was almost immediate (Figure 8). As a result, the reported measles cases in 2005 were low, with less than 1,500 notified, compared to more than 9,513 cases in 2004. This also triggered a revised measles control strategy: comprising one catch-up campaign, then a follow up campaign of newborns after the initial catch-up every 4-5 years to reduce the pool of susceptible children.
4.3.2 IMCI, Malaria and Reproductive Health

IMCI

During 2002, 28 members of Health Area Management Teams (HAMTs) in the Blue Nile and White Nile states were trained on managerial and cost recovery mechanisms. The training of IMCI health personnel on standard case management using the newly adapted IMCI materials resulted in the improvement of their clinical skills and performance. Nineteen localities of the Health Area System (HAS) were provided with essential drugs and basic health equipment. The IMCI strategy was expanded to cover 14 northern Sudan states.

During 2003, 84 HAMT members were trained. The HAS expanded to 5 new localities. The IMCI strategy was expanded too. UNICEF and WHO supported training of 192 health care providers on standard case management, community component and home care from 81 IMCI implementing health facilities in 9 states. The provision of more than 1,300 PHC kits and loose essential drugs items to health facilities in the focus states enhanced the capacity of these facilities to provide basic health care services to an estimated 1.1 million children and women.

During 2004, 33 localities in focus states had introduced the HAS. The objective of introducing the HAS in 64 localities could not be realised due to the reorganisation of localities and the further implementation of HAS suffered from lack of inputs/resources. The training of 32 HAMT members from 4 different states as master trainers created a pool of trained persons to support training of HAMTs in all focus states. The training of more than 100 health workers on IMCI, helped to increase the number of localities introducing IMCI to 28 localities. Almost one-third of the country’s health facilities were by then following the IMCI approach, providing integrated health care to almost 40% of the under-five child population. There was a marked difference between IMCI trained staff and other health staff according to a PHC study conducted. For instance, the risk of prescribing unnecessary antibiotics was three times greater among untrained staff than among trained staff. The IMCI community component was also strengthened through the training of some 120 staff on key family practices.

During 2005 about 1,800 medical officers and medical assistants were trained resulting in 54% of the health facilities having trained IMCI personnel. About 60 health workers in 33 localities in 6 states were trained enabling 65 HAMTs to function in promoting delivery of health services at the local level through community participation.
During 2006, some 2.5 million conflict-affected persons were provided with a package of essential health care services. This included: rehabilitation of 16 health facilities, provision of 2,500 PHC kits, provision of ORS and other loose drug items, and medical and laboratory equipment and supplies. Over 8,600 people were treated for Acute Watery Diarrhoea (AWD)/cholera. Some 181 health workers were trained and essential equipments provided. Health facilities providing IMCI increased to 1,334 in Northern Sudan, reaching a total of 567,000 under-five children. Effective child care capacity was strengthened through the training of 830 health workers on various aspects of child care. Planning and policy support was provided in the development of the following documents: draft five-year Health Strategic Plan, a National Health Policy and a Child Health Policy. In Darfur, the Programme additionally ensured access to essential health care for conflict-affected populations. 2,150,000 people (69% of the three million planned) were reached with essential health care services through support to 260 fixed-health (75% of facilities) and mobile services. The 2006 Inter-agency Darfur wide survey showed a two-week recall of common diseases in children under-five indicated a reduction of AWD, pneumonia and fever from 43.5%, 45.3% and 56.3% in 2005 to 32.7%, 38.2% and 52% in 2006 respectively.

**Malaria**

RBM was established and integrated in the National Malaria Control Program in Sudan since 1999. UNICEF was one of the key members of RBM. Terms of Reference within RBM focus on: Giving special attention to the most vulnerable groups in the community i.e. women and children; Availing insecticide-treated bed nets (ITNs) for families through a resource network; Enhancing community mobilization and sensitization towards malaria control; Supporting community-based interventions for improving health and nutrition.

UNICEF supported malaria control as part of the essential package of IMCI intervention; and enhanced its treatment delivery through the primary health system. UNICEF has supported training of health workers and lab technicians on skills to improve the diagnosis and treatment of cases, and updated training based on the new protocol.

UNICEF also supported an institutional effort to improve malaria control management in the country. As a result, 10 malaria epidemic/endemic states now have malaria departments within their Ministries of Health. Annually around 15-17 malaria diploma health cadres, trained through Blue Nile Research and Training Centre (supported jointly by WHO and UNICEF) had been able to provide technical support and supervision to health workers at facility level.

In 2004, there was a policy change on malaria control. A new treatment protocol came into effect. UNICEF supplied more than 776,000 ACT anti-malarial courses since 2004, as a result, ACT treatment represents more than 10% of all malaria treatments according to the National malaria survey conducted in October 2005.

On the prevention side, UNICEF served as a main source for insecticide treated bed nets to help prevent malaria. It provided more than 900,000 ITNs during the 2002-06 period, which should potentially contribute to 20% coverage of U5 children. A summary of the input, output and outcome of UNICEF support is indicated in Figure 9 below.
The collective efforts from all levels have showed a hope for the future of malaria control. The reported cases in 2002 were more than 3 million, it dropped to around 2 million in 2004, 2005, and 2006, and the reported deaths dropped as well. This is an indication of a positive trend. On the other hand, bearing in mind that Sudan is a country with a health system still under rehabilitation and development, and with many disease outbreaks to be controlled annually, and with an information system at its weakest level, the case reporting of malaria and associated deaths should be cautiously handled when used as an indicator on the trend.

U5 children who had fever in the last two weeks prior to the survey dropped from 22.8% in 2000 MICS to 11.7% in 2006 SHHS. But the National malaria survey 2005 conducted during the peak malaria season to examine the malaria burden in the malaria states found almost half of U5 children in some states, such as Sinnar, had fever in the last two weeks.

During our field trips, the medical assistants / nurses in the primary health units stated that malaria cases dropped in recent years and the situation is now better handled than before. The capacity building focus on the primary health care workers paid off. During our field visit, the PHC workers presented professional skills in the use of rapid test in malaria diagnosis. Supplies were provided at a higher rank health centre by submitting routine data. The effective management, early diagnosis and effective treatment, plus prevention through use of insecticide mosquito nets, might contribute to malaria containment.
A text box at below illustrated some observations during the field visit.

Field visit to health facilities in Dameek and Alkoaik in the South Kordofan

It was 28th of November, a dry season. On the map, Dameek looks close to the state capital Kadugli. Though we chose shortcut, it took us around three hours, mostly on dirt road, sometimes through savanna bushes, through dry creeks, through grassland up to two meters high. Dameek health facility, a PHC, served about 2000 populations nearby. It had two nurses. One of them was recently reallocated to here. The nurse stated that around 20 patients per day. Today was not a busy day, so far only two patients in the whole morning. There were two rooms with a bed in each room. Malaria, eye infection, ARI, were main complains. The rehabilitation of the clinic started this year. It was almost done. Provision on furniture, such as desk and chairs were needed. Antibiotics were needed as well, to treat ARI. The nurse performed a professional malaria rapid test using finger blood. He was proud of his skill. The malaria cases were reported monthly. The supplies were obtained after submitting the report.

There was a refrigerator but the cold chain was not functioning yet. The mobile team reached here every month for vaccination. There was no specific date when the cold chain could be functional.

The second nurse used the health facility for accommodations. It was temporary arrangement, we were told.

During visit, a woman from the village commented that all mosquito nets should be distributed from the health facility to ensure the fairness.

The nearby Alkoaik health facility was bigger, a Health Center, staffed by medical assistant, nurse, and midwives, with two wards (no patients during visit), one lab with microscope. There was a revolving drug fund on self support treatment. We were told that an army clinic was nearby, and patients went there for free treatment as well. The haemoglobin test was needed. They also would like to have a delivery room. The women from the community indicated that disputes on land between local population and IDPs sometimes occurred.

Reproductive Health

During 2002, 410 VMWs were trained in 9 focus states increasing the midwife/population ratio from 1:6,000 in 2001 to 1: 4,500 in these states. This together with the provision of midwifery kits to the newly trained VMWs, and replenishment of 143 old kits improved basic midwifery services. The distribution of 3,000 copies of the standard obstetric care manual to skilled birth attendants, the provision of emergency obstetric care units to five rural hospitals and support to Sudan National Maternal Audit by activating the specialised committee and printing of registers and necessary forms contributed to the improvement of maternal care in 5 out of 8 states targeted in 2002.

During 2003, 310 VMWs were trained together with the provision of midwifery kits to the newly trained VMWs, and replenishment of old kits. This helped to improve basic midwifery services and access to safe and clean delivery assistance to 620,000 CBAW.

During 2004, 110 VMWs were trained bringing the total number of midwives that had completed the one-year course in UNICEF focus states to 830. Fifteen additional rural hospitals were equipped with emergency obstetric care kits and 60 doctors received training on EmOC. An estimated 500,000 CBAW were estimated to have benefited from the improved capacity of health personnel and facilities to deliver safe motherhood services.
During 2005, a total of 1,069 VMWs were trained and essential drugs and midwifery kits were provided to 267 midwives. UNICEF also provided technical and financial support for the EmOC needs assessment in 162 hospitals in different states of Sudan.

During 2006, support for maternal mortality reduction focused on assessing skills of existing VMWs by reviewing the midwives curriculum, training 230 of a targeted 500 midwives and retraining 420 of a targeted 12,000 practicing midwives.

The inputs from UNICEF had greatly contributed to the improvement of CBAW receiving minimum antenatal care from skilled personnel, from 70% in 2000 to 74% in 2006, delivered by skilled person from 58% to 69%. It would appear likely that such improvements could contribute to the ongoing momentum to reduce maternal mortality in Sudan. But the current maternal deaths were still very high and the challenge is much greater and the more inputs are required to achieve substantial reductions in MMR.

PMTCT services for pregnant women was lagging behind during the program cycle, and only gained momentum in South Darfur, North Kordofan, Kassala, and Khartoum after 2006.

4.3.3 Nutrition

UNICEF Healthy Growth and Nutrition project aimed to ensure that during the programme period: at least 90% of all children 6 months to 5 years of age received adequate vitamin A supplementation; malnutrition rates were reduced among U5 children in the focus states by 50%; and that at least 75% of CFCI communities implemented appropriate community-based growth monitoring and promotion activities, including proper infant feeding practices.

Though there was no clear strategies on how the programme achieved a gradual 50% malnutrition reduction. However, the activities to attain a reduction later during the programme cycle were rather comprehensive. The activities included increased routine vitamin A supplementation, iron and folic acid supplementation, promotion of iodised salt, promotion of breastfeeding, improving household caring practices, growth monitoring and promotion. At the end of the programme cycle, the goal of the programme seemed to be revised into a 25% reduction.

To help tackle acute malnutrition, UNICEF supported therapeutic feeding centres for the rehabilitation of severely malnourished children, as well as units in local hospitals. This support included provision of special foods such as therapeutic milk and nutritional pastes. Identification and referral systems for severely malnourished children were improved. UNICEF also played a critical role in supporting early warning systems and nutritional surveys.

During 2002 more than 90% of children aged 6-59 months were covered with Vitamin A supplementation, more than 2,500 beneficiaries per month received nutrition rehabilitation and more than 266 metric tonnes (MT) of UNIMIX, 79MT of BP5, 47MT of F-75 and 137MT of F-100 were provided for supplementary and therapeutic feeding programmes in 11 states. Enhanced growth monitoring by health facilities and information required for designing interventions to reduce malnutrition was initiated in four states (South & North Darfur, Blue Nile and North Kordofan) covering over 15,000 U5 children. Nutrition monitoring surveys were conducted in Kassala, West Darfur, South Darfur and Upper Nile providing baseline measures to inform interventions to reduce malnutrition rates. Comprehensive nutrition centres were established in Nyala (South Darfur state) and El-Obeid (North Kordofan state). Community-based nutrition surveillance for early warning systems was established in North Darfur, Blue Nile, and South and West Kordofan states. Nutrition educators (47) were trained in three states (West Darfur, West Kordofan and Gedaref). The training of 40 master trainers of midwifery schools in three states enabled VMWs to act as Baby Friendly best
practice promoters. Orientation meetings, seminars and media promotion activities were conducted during International Breastfeeding Week facilitated community based breastfeeding support and counselling in these states. More than 2 million tablets of Iron / Folate were distributed to pregnant and lactating women in high-risk areas. A baseline survey on the incidence of IDD was conducted in goitre endemic states. The organisation of two training courses on micro-nutrients for 45 health staff from IDD high-risk areas, social mobilisation activities involving 5,000 community leaders and monitoring availability and utilisation of iodised salt through provision of field test kits promoted consumption of iodised salt in selected high-risk areas.

During 2003, more than 35,000 children were provided 240MT of UNIMIX, 7.5MT of F-75, 60MT of F-100 and 16.5MT of BP5 were supplied to 25 Therapeutic Feeding Centres in 13 states. Salt specification was endorsed banning the production of un-iodised salt in the country. UNICEF and UNFPA supplied Iron and Folate tablets to 166,000 pregnant women in high-risk areas.

More than 50% of post-partum women (957,390) and 2,639,058 children aged between 6 and 59 months (constituting 57% of U5 target population) received vitamin A supplementation through integration with routine EPI in 13 states. About 150 nutrition personnel and 150 CFCI volunteers were trained on nutrition surveillance, growth monitoring and breast feeding counselling. About 80 health personnel were trained on the prevention of micronutrient deficiencies.

During 2004, training continued on the management of severe acute malnutrition and 45 participants (SMOH and international NGOs) from 6 states were trained. National guidelines on the management of severe acute malnutrition were adopted following the training. Support was provided to more than 50 therapeutic feeding centres in 14 different states. However, the majority of the TFCs were located in Greater Darfur. Many NGOs involved in the establishment and running of the TFCs and SFCs. Because of the emergency situation in Darfur, most of that year’s nutritional surveys were conducted in Greater Darfur, but a nutrition survey was also conducted in Abyei area (West Kordofan), that showed a GAM higher than 20%. FMOH, with support from UNICEF, developed a package of messages on life skills and family practices, as well as IEC materials on breastfeeding. More than 3.5 million children aged from 6 to 59 months received vitamin A supplements during either polio NIDs or measles campaigns, in 21 different states. An estimated 300,000 pregnant women received iron and folic acid supplementation during antenatal care activities. Sensitization activities about iodized salt continued to be conducted in five states. Some nutrition surveys have shown an increase vis-à-vis the 1% prevalence of iodized salt found during the 2000 MICS.

During 2005, vitamin A supplementation coverage was maintained at 95% (3.4 million) children aged 6 to 59 months during the polio NID campaigns and 320,000 pregnant women in focus states received iron and folic acid supplementation. During the year, a sound basis for the management of severe malnutrition was established with National guidelines on treatment of severe malnutrition developed. Nutrition surveys were conducted in Blue Nile, Kassala, Khartoum IDP camps and the Darfur region showed acute malnutrition ranging from 16-25%. A pilot nutrition surveillance system with a database was established in the Darfur states. Eighteen (18) TFCs were supported through the provision of equipment and supplies and the training of their health workers on management of acute malnutrition. A National Food Fortification Alliance (NFFA) consisting of GoS, UN agencies, NGOs and private businesses partners in food industry was established for generating strong support for food fortification in Sudan and to promote iodized salt consumption by households.

In 2006, it was decided to operate nutrition as a separate Section in UNICEF to give the programme more focus. Since then, UNICEF has served as the lead agency for the nutrition sector in Sudan, providing coordination, guidance and technical support. At both the Federal and State levels (three Darfur states and Southern Kordofan state), nutrition coordination mechanisms were established, regular updates on the nutrition situation were disseminated, gaps were identified and partners were
directed to areas of need. Through this structure, a National Nutrition policy and strategy, manual and guidelines were developed to promote harmonization in data collection and emergency Nutrition Programme implementation. UNICEF provided direct technical support to the Ministry of Health to facilitate harmonization. Also during 2006, legislation for Universal Salt Iodisation (USI), sugar and flour fortification was issued by the Government to provide a framework for enforcement of USI, flour and sugar fortification in Sudan. A high level inter-ministerial Steering Committee was approved by the FMOH to oversee this process. In 2006, UNICEF supported the FMOH in the development of a comprehensive essential nutrition service package and training manual for nutritionists, health staff and nutrition educators. This initiative aimed to provide nutrition services at health facilities and in catchment areas in 2007 in order to contribute to a reduction in stunting and low birth weight and to provide skills to caregivers on optimum infant and young child feeding. Celebration of the National Breast Feeding Week was also conducted in August 2006, with advocacy for legislation on a code for marketing of breast milk substitutes. Two rounds of vitamin A supplementation were provided to 4,223,697 children in non-Darfur states and 1,175,801 children 6-59 months in Darfur states. In Darfur, of the 20% post-partum women targeted for vitamin A supplementation, 19.4% were reached in 2006. A USI framework was developed for social mobilisation, marketing and advocacy with a core team for each state trained in food fortification issues. An assessment of salt production facilities was conducted in Red Sea, Darfur and Kordofan states, in collaboration with the FMOH, WFP and consultants to assess production capacity for Universal Salt Iodization. In the Darfur region, 337,000 women of child bearing age and 257,000 U5 children received iodised oil capsules, representing 80% coverage of the targeted areas. In South Darfur state, legislation banning the sale of un-iodised salt was enforced and this has increased consumption of iodized salt in the state to over 50%. In the Darfur region, the existing 56 Therapeutic Feeding Centres (TFCs) and 87 SFCs were supported with supplies targeting 5,707 children in TFCs and 32,336 in SFCs. There was a reduction in the admission rate to 50%, due to increasing insecurity and withdrawal of NGOs in Darfur, but also due to an overall improvement in the nutritional situation in several of the conflict affected locations in Darfur. In the non-Darfur states, 2,000 severely malnourished and 10,000 moderately malnourished children were reached through existing SMOH paediatric units. UNICEF was involved in the final draft of the guidelines for the treatment of Severe and Moderate Acute Malnutrition which became operational to assist NGOs in Darfur and other parts of Sudan.

The rate of moderate and severe malnutrition, measured by wasting, was around 13% in 2006, which was similar to its 2000 rate. The efforts, mostly driven by the emergency situation in Darfur, and the level of treatment support through TFC and SFC, were not able to reduce the considerable malnutrition status. Though the economy of the country has had stable investment during the programme cycle, the general poverty within the population remains a challenge and indirect cause on malnutrition.

Towards the end of the Programme cycle, to expedite the achievement of the MDGs, some of UNICEF’s nutrition activities became an integral part of the Sudan Accelerated Child Survival Initiative (ACSI), which brought together a package of key interventions, including immunization, vitamin A supplementation, provision of deworming tablets, promotion of breastfeeding, use of iodised salt, health education and handwashing, distribution of insecticide-treated bed nets, and nutritional screening and growth monitoring, to reduce child mortality rates. UNICEF worked with government partners to consolidate and update nutrition policies and advocated for legislation on fortified foods and supported the training and skills development of nutrition workers.

4.3.4 Emergency support

It is well recognized that the coordination on Emergency Preparedness and Response was very efficient in Sudan. The partners, such as FMOH and UN organizations, are all committed and have clear mandates to respond to such emergencies.
In additional to capacity building of the government, UNICEF was responsible for provision of supplies, including essential drugs, vaccines, and provision of therapeutic milk and anthropometric equipment to therapeutic feeding centres, PHC kits, safe delivery kits, ITNs & insecticides, non food items, water sanitation services and provision of family hygiene kits.

The coordination within UNICEF ensured that UNICEF fulfilled its core commitments for children: which included conducting an assessment within 48 hours, standing in readiness to assist 35,000 persons within 10 days for 2 months. This plan has been implemented since 2000, and annually updated to meet the needs of the new situation. UNICEF have maintained a warehouse in Khartoum to receive supplies in transit for further distribution to end-users and to pre-position supplies to allow prompt response to emergency needs. Stock reports are issued to Programme Sections and the CMT members on a monthly basis for monitoring and distribution.

the event of an emergency, such as a disease outbreak.
Table 4, cited from ERP plan, states how coordination and action is conducted in a timely fashion in

Table 4: Example of UNICEF Emergency Response Plan

<table>
<thead>
<tr>
<th>Activities in event of an outbreak of meningitis or AWD</th>
<th>By Whom</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Establish direct communication with the Federal and state health authorities to get feedback on existing facilities, personnel and the prevalent risk factors in the designated location.</td>
<td>Chief, H&amp;N Section</td>
<td>Immediately after being notified of the outbreak</td>
</tr>
<tr>
<td>2. Participate in meetings of the EPR Task Force at FMOH to formulate a contingency plan with budget.</td>
<td>H&amp;N and WHO focal points</td>
<td>Within 48 hrs.</td>
</tr>
<tr>
<td>3. Analyse feedback on available info and data from the field and support the health information system at the area in question.</td>
<td>POs-H&amp;N &amp; Health emergency consultant</td>
<td>Within 48 hrs. and ongoing</td>
</tr>
<tr>
<td>4. Identify and quantify resources available at SCO &amp; the nearest sub-office</td>
<td>PO- H&amp;N / supply Section</td>
<td>Within 48 hrs.</td>
</tr>
<tr>
<td>5. Finalise with major actors (FMOH, WHO, ICRC, MSF-H, SRC and MSF-F) an emergency response workplan.</td>
<td>PO H&amp;N and Health emergency Officer</td>
<td>Within 72 hrs.</td>
</tr>
<tr>
<td>6. Pre-position and transport life-saving drugs, vaccines, syringes and supplies to sub-Offices, NGOs or SMOH for prompt distribution if needed</td>
<td>PO H&amp;N</td>
<td>Within 72 hrs.</td>
</tr>
<tr>
<td>7. Update/ avail guidelines on clinical case management in light of the epidemiological feedback on the causative agent</td>
<td>H&amp;N and WHO focal points</td>
<td>Within 7 days</td>
</tr>
<tr>
<td>8. Support ad hoc training course on disease surveillance for health workers at state and locality levels.</td>
<td>PO – H&amp;N</td>
<td>Within 7 days</td>
</tr>
</tbody>
</table>

During 2002, emergency situations arose due to floods, conflict and displacement involving 10 locations and more than 160,000 persons. These situations were promptly and adequately responded to by direct support to affected areas with essential emergency supplies and to the Federal EPR programme by training of personnel and pre-positioning of supplies. In the Nuba Mountains area, UNICEF transported 50 metric tonnes of essential drugs and 156 metric tonnes of nutritional supplies to support IDPs.

During 2003, emergency situations that arose due to floods in Kassala, El Gedarif and White Nile and conflict in Kassala and Greater Darfur region were promptly responded. The assistance included shelter/relief items and family hygiene kits to meet the needs of over 1,000 families, essential drugs to health facilities to meet the needs of 100,000 persons for six months. The incidence of malaria was reduced in flood-affected areas in Kassala through the provision of ITNs to cover 12,000 families, including 3,000 IDP families. The assistance in the conflict-affected populations in Darfur included the provision of essential drugs to health facilities to meet the needs of over 200,000 children and women for 3 months, measles vaccination, and provision of shelter/relief items to meet the needs of 2,000 families.
During the same year, UNICEF participated actively in all activities leading up to the preparation of the UN Consolidated Appeal for the Sudan Assistance Programme (ASAP), which included three principal components: Humanitarian Action (HA), Transitional Recovery (TR) and Programme Enabling Support (PES).

During 2004, through the provision of essential drug kits and medical equipment to 144 fixed health facilities and 23 mobile teams, and technical support and/or allowances to and training of mobile teams, over 1,220,000 conflict-affected persons in Darfur had access to health care. A health facility monitoring system had been put in place to ensure the completeness of service package and quality of service. However, the support was not enough to meet the needs of a total population of 2,189,985 conflict-affected people as of the end of November. It is estimated approximately 64% had access to primary health care facilities. Successive poor harvests in 2003 and 2004 also threatened to reduce food security dramatically, raising the risk of further displacements and dependency on food aid.

During the programme cycle period, it was realized that the level of buffer stock (materials enough for a population of 35,000 people during the initial phase of the emergency) proved to be insufficient and needed to be revised. Also in this period, the operational capacity of the international aid community in Darfur rose dramatically from 228 national and international workers in April 2004 to approximately 13,500 by August 2005.

In 2005, a Yellow Fever vaccination campaign, supported by UNICEF, WHO, FMOH and NGO partners in Southern Kordofan state prevented the emergence of an epidemic. Overall, 1,582,594 people of a targeted 1,614,569 persons aged 9 months and above were vaccinated by 18 December 2005.

The UNICEF Darfur Emergency Health project reached 2 million conflict-affected people (60% of 3.4 million affected population) with essential health care services. The Family Shelter and Relief project, responded to support return of IDPs to areas of South Kordofan, Blue Nile and Abyei, with sufficient relief and shelter materials. In response to the needs of returnees stuck en route in Abyei and Dem Zubeir, due to flooding in Damazin and Port Sudan, as well as from IDP squatter areas demolished in Khartoum, UNICEF provided NFIs to approximately 13,000 families in need. NFIs were also channelled into the common pipeline for Darfur, which supported over 1.2 million people.

At the end of 2005, UNICEF provided inputs and resources for a survey in December to review planning assumptions and help confirm the NFI priorities for 2006.

In 2006, UNICEF dealt with emergencies throughout the whole year. In addition to the ongoing crisis in Darfur, large outbreaks of cholera, meningitis and yellow fever were contained. In the second half of the year a major acute watery diarrhoea/cholera outbreak spread in Sudan. UNICEF rapidly responded with pre-positioned health and WES supplies and planned a comprehensive response with WHO and the Federal Ministry of Health. UNICEF mobilised resources from the CHF, OFDA and ECHO for WES and health communication interventions. At the height of the outbreak UNICEF was chlorinating water-points in all affected areas. Fortunately, outbreaks were only seen in the towns of Darfur, and not in IDPs camps.

In the first quarter of 2006, renewed fighting caused displacement in and around Gereida in South Darfur, swelling the number of IDPs in the area to 120,000 people. UNICEF responded through the provision of primary health care equipment, hygiene promotion information, water and hygiene equipment and resources, with the assistance of a CERF grant. The same year, UNICEF developed a new and comprehensive Emergency Preparedness and Response Plan in anticipation of large-
scale displacement during the post conflict era. In early 2006, as SPLA forces were due to leave Eastern Sudan, and due to the high possibility of war between Ethiopia and Eritrea, UNICEF, together with other partners, as required by UNCT, prepared an Eastern Sudan Contingency Plan. The plan was prepared and stocks pre-positioned for a first wave of 50,000 refugees of a total 300,000 anticipated, though fortunately this situation was averted with the signing of a peace agreement.

In summary, the response to emergencies was appropriate and collective. In some emergency areas, the health facilities in different levels were almost all run by the international organizations or NGOs. In some circumstances, government hired NGOs to deliver services it was unable to provide.

During our visit to South Darfur IDP camps, though the health facility building itself was very simple, it was well equipped with essential drugs, cold chain equipment, basic lab equipment, and staff including doctor, medical assistant, nurse, lab technician and vaccinators. The community nearby, a CFCI community without a health facility, had been benefiting from the service from health care facility in the IDP camp, and furthermore from its education services. The nearby community sent their children to IDP camp school since the school in its community did not provide teaching beyond third grade.

4.4 Programme Effectiveness and Impact

4.4.1 Reaching target

During the Programme period every effort was exerted to sustain programme activities in the 9 targeted focus states. After 2005, the Comprehensive Peace Agreement provided continued opportunities for recovery and development throughout Sudan. Despite significant political tension around issues of oil revenue and the demarcation of borders and despite the continuation of the conflict in Darfur and the increase in the numbers of displaced and vulnerable people, UNICEF and partners were able to provide life saving support and maintain services, thus providing a healthier environment to millions among the affected population.

In terms of reaching quantitative targets, the majority were either achieved, or close to being achieved, but coverage of U5 children to receive minimum care and targeted malnutrition reductions still have a long way to go before being achieved (table 5). More inputs are needed to achieve substantial reductions in child and maternal mortality.
4.4.2 Impact related to MDGs

Despite some remarkable successes in specific areas, the prognosis for Sudan attaining the child and maternal health related MDG targets is mixed. (Table 6). At the end of the Programme cycle, MDG 5 -Improve Maternal Health, remained the biggest challenge among all, the target will not be met without extraordinary effort. There are some achievements in MDG 4 -Child Health such as measles coverage rate, but the child mortality remained challenging. MDG6 - Combat HIV/AIDS, malaria and other diseases: malaria control was promising although data and its quality needs to be examined carefully.

Bearing in mind that mortality data from surveys often reflect the health situation, on average, 2.5 years before the survey, it is anticipated that the 2008 census, which the results not yet released, may describe a better picture of the impact of the 2002-2006 programme on child mortality.
Globally, the child mortality rate has declined by almost one quarter between 1990 and 2006. In northern Sudan, the child mortality rate has declined less than 20%. Relatively, Sudan is now in a better situation than most other African countries, but is in a lower position compared to other North Africa and Middle East countries (Figure 10).

```
<table>
<thead>
<tr>
<th>MDG indicators</th>
<th>1990 Northern</th>
<th>1999-2000 Northern</th>
<th>2006 Northern</th>
<th>MDG target Northern</th>
<th>On Track</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence of malnutrition (waste, %)</td>
<td>15.7</td>
<td></td>
<td>13</td>
<td></td>
<td>Unlikely</td>
</tr>
<tr>
<td>Under-five Mortality (per 1000 live birth)</td>
<td>124</td>
<td>104</td>
<td>102</td>
<td>35</td>
<td>Unlikely</td>
</tr>
<tr>
<td>Infant Mortality Rate (per 1000 live birth)</td>
<td>77</td>
<td>68</td>
<td>71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measles immunization (%)</td>
<td></td>
<td>50</td>
<td>75 (include campaign)</td>
<td>100</td>
<td>Likely</td>
</tr>
<tr>
<td>Maternal Mortality Rate (per 100,000 live birth)</td>
<td>537</td>
<td>509</td>
<td>638</td>
<td>127</td>
<td>Unlikely</td>
</tr>
<tr>
<td>Birth attended by skilled personnel, midwife included (%)</td>
<td>58 (87, if include trained TBA)</td>
<td>69</td>
<td>90</td>
<td>Likely</td>
<td></td>
</tr>
</tbody>
</table>
```

**Table 6: Key Child Maternal Health MDG Indicators and the Status, Northern Sudan**

4.4.3 Wider impact of the Programme

The Programme made a noticeable impact on the programme environment. A variety of policies and plans have been designed at both National and State levels. At the grass root level, community members were aware of the Programme. The concern of families about child immunization, child nutrition, child rights and disease prevention has strengthened. Despite its fragility in some areas, a peaceful environment has become conducive to the various activities of the Programme. Previous areas of conflict have started to return to normal, allowing various activities to be sustained.

In light of the SHHS results, and as part of the extensive joint planning exercises undertaken across the health sector, key opportunities to have a distinct impact on the overall environment included promotion and implementation of the Accelerated Child Survival Initiative, which attempts to scale
up existing programmes, while identifying capacity and resource shortfalls and prioritizing specific activities at Local, State and National levels.

This favourable environment was conducive to the development of a five-year National Development Plan setting out new development targets for Northern Sudan to be achieved by 2011. Within the context of the policy and operational environment created by such work, UNICEF and its partners continued to focus at ground level on the humanitarian and development needs of children and women.

During the two years which have elapsed after the end of the Programme cycle (2007-2008), prevention of childhood diseases, including diarrhoea, malaria, measles and acute respiratory infections had been addressed through improved quality of health care and continue through the development of integrated health and nutrition activities through ACSI. The Initiative is bringing together a package of key health activities, including immunization, vitamin A supplementation, provision of deworming tablets, promotion of breastfeeding, use of iodised salt, health education and handwashing, distribution of insecticide-treated bed nets, and nutritional screening and growth monitoring.

The provision of these key services had been complemented by support to building capacity amongst community-based health workers and the introduction of new implementation approaches such as new-born care, and the expansion of comprehensive emergency obstetric care and neo-natal care. This latter area includes provision of equipment and training of health workers, the prevention of mother-to-child transmission of HIV, and the provision of safe and adequate maternal health.

Ensuring that achievements are sustainable requires investment at all levels of the health sector in Sudan, particularly in policy development. During the programme period, UNICEF was instrumental in the design and adoption of various policies by the Government. These policies were of a general nature, but also tackled specific aspects relevant to the health programme extending from reproductive health, nutrition and immunization to malaria, tuberculosis and HIV/AIDS.

4.5 Programme Efficiency

UNICEF conducted several process reforms to respond quickly and timely during 2002-2006.

UNICEF was a main supplier regarding essential child care, routine vaccination, PHC kits, mosquito nets, midwifery kits, relief shelters and supplies. The supply was improved through the procedure revision in Copenhagen, establishing a warehouse in Khartoum, and planning and ordering in advance. There was also a review regarding the components, quantity, and the package of the PHC kits, to ensure the PHC kits are better tailored to the needs of workers at the first level of primary care, and which was voiced by NGOs during our field visits.

Fund allocation was rather complicated. Some of the recipients were identified on the Annual Work Plan, which means that funds, once it is available, could directly be allocated to the State counterparts. But not all programmes have the same levels of detail regarding the breakdown of the budget, and some financial supports such as immunization campaigns were under Federal control. Because of spending pressure in the short term to meet the needs of reporting in Programme cycle, the funds might not be sufficiently used to expand and improve the service to the beneficiary.

The linkage of the programme to ensure a continuum of service, the coordination and supervision during implementation needs to be further strengthened to enhance the efficiency at health facility level. The enthusiasm of the health cadre at the primary health unit level to gain better skills needs to be further explored to expand and improve the quality of the service.
The primary health care service provided by NGOs in IDP camps were better, in terms of a wide range of types of service (laboratory equipment for blood and sample testing, treatment, vaccination services), and number of patients, though the health building visited was temporary and not in a good condition. The government health managers could learn from NGOs how to explore the ways to improve and manage the service better. International organizations should support improvement of SMOH facilities rather than simply support NGOs due to the better service they provide.

The Health and Nutrition Programme’s budget was around US$38 million for the programme cycle. The actual requisition amount was far more than the plan. 2006 has been the year with highest expenditure. From 2004, the Darfur crisis had effect on its budget and therefore a shift in the programme to respond the emergency.

Table 7: UNICEF Expenditure in Health and Nutrition Programme, 2002-06, Sudan

<table>
<thead>
<tr>
<th>Programe</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunisation Plus</td>
<td>7,329,301</td>
<td>4,207,095</td>
<td>6,854,635</td>
<td>7,868,816</td>
<td>7,939,239</td>
</tr>
<tr>
<td>Primary Health Care</td>
<td>1,024,949</td>
<td>2,440,769</td>
<td>6,614,255</td>
<td>4,858,141</td>
<td>4,807,635</td>
</tr>
<tr>
<td>Healthy Growth and Nutrition</td>
<td>509,160</td>
<td>850,359</td>
<td>2,244,520</td>
<td>731,310</td>
<td>971,008</td>
</tr>
<tr>
<td>Relief and Shelter Materials</td>
<td>83,128</td>
<td>239,306</td>
<td>4,967,386</td>
<td>675,930</td>
<td>11,066,757</td>
</tr>
<tr>
<td>Darfur – North*</td>
<td></td>
<td></td>
<td></td>
<td>4,130,401</td>
<td></td>
</tr>
<tr>
<td>Darfur – West</td>
<td></td>
<td></td>
<td>344,651</td>
<td>16,174,862</td>
<td>1,441,320</td>
</tr>
<tr>
<td>Darfur – South</td>
<td></td>
<td></td>
<td></td>
<td>3,099,918</td>
<td></td>
</tr>
<tr>
<td>Programme Support</td>
<td>1,382,322</td>
<td>1,106,837</td>
<td>1,478,295</td>
<td>1,194,392</td>
<td>3,121,399</td>
</tr>
<tr>
<td>Total</td>
<td>10,328,862</td>
<td>8,844,367</td>
<td>22,503,742</td>
<td>31,503,451</td>
<td>37,941,034</td>
</tr>
</tbody>
</table>

With such a big size and many unpredicted situations happening all the time during the Programme cycle, it was really difficult to see how the supported programme was cost-effective. The difficulty of collecting programme expenditure data at Federal and State level, resulted in a challenge of calculating programme costs, particularly the cost per unit. We used additional cost information from UNICEF, estimation, and child health cost study, to give a quantitative presentation on efficiency.

According to the cost of child health study conducted by UNICEF, the cost of the immunization service (including supplemental immunisation activities) for Sudan was estimated around $US 29 million, with recurrent costs $US 20.6 million, and capital cost such as cold chain equipment $US 8.4 million. Among the $US 20.6 million recurrent costs, half were for supplementary immunisation activates, the second half went to routine immunisation service. This will translate to $US 5-6 per child per year to protect the child from vaccine preventable diseases. The actual expenditure data would help with the examination of real picture.

From long-term point of view, expanding and improving the routine immunisation service in health facilities would contribute to the efficiency of immunisation and its sustainability.

UNICEF is the main supplier of Long Lasting Insecticide Treated Nets (LLITN). There are also other organizations such as WHO and the Global Fund who support activities in malaria control. Mosquito nets were distributed during emergency situations, as well as part of emergency package, to tackle the massive population movement during flooding or conflict. During 2002 to 2006, according to the yearly reports, around 1 million LLITNs were distributed by UNICEF alone. If we assume that one mosquito net can protect more than one children (since normally more than one child sleeps under one net), then UNICEF alone at least ensured 25% of U5 children are sleeping under a LLITN. The SHHS 2006 indicated around 30% usage among U5 children. But again the data from other
organizations, and on the ground suggest a need for improved monitoring to ensure transparent and fair distribution, and to assess the rate of non-utilization after distribution. These issues remain to be investigated and discussed further.

A LLITN, including operation costs, $US 6 each. However, if one mosquito net was used by more than one child (which was often the case in Sudan), to protect at least one child from being bitten by a mosquito bite during sleep, it would cost around $US 4 USD across 5 years. Per year, the cost per child is reduced to around $US 0.8.

4.6 Programme Sustainability

A measure and assessment of the sustainability of service delivery to the target group was conducted by identifying the sustainability elements of the Programme in terms of:

- financial resources
- human resources
- social acceptance
- operation and maintenance
- cost recovery and
- overall impact (see section, wider effects/impact of the programme)

In view of the evolving political situation in Sudan, particularly related to the coming elections in 2009 and the unresolved situation in Darfur, the UNCT agreed with the GONU to initially extend the 2002-2006 UNDAF to 2007, and which extended further into 2008, with a view to developing a multi-year UNDAF for 2009-2012. This analysis, therefore, spills over to these two extension years that will be followed by a full-length country programme for 2009–2012.

4.6.1 Financial resources

During the Programme period 2002-2006, the major financial components were contributed by funds from external donors. Most of this external funding was diverted to the emergency situation in Darfur. The Government share in the financial resources of the Programme was modest. Government contribution amounted to covering salaries of personnel and the cost of syringes for vaccine delivery of EPI activities (GONU paid $US 1.6 million in 2007 and $US 3.2 million in 2008 against the cost of syringes for vaccine delivery).

Apparently, there is a huge sustainability gap with respect to financial resources which needs to be gradually bridged in future cycles. Dependency on adequate financial resources is a lingering problem faced by health programmes throughout previous cycles. While this is understandable in emergency situations, development activities, like building health facilities, providing routine health service, should be sustainable by government funding.

During the Programme period the country’s economy has been growing quickly largely due to the investment boom around the oil sector. In the foreseeable future, Sudan can potentially use its significant and growing oil earnings to support the reconstruction and development efforts in the health sector. With the signing of both the Comprehensive Peace Agreement and the Darfur Peace Agreement, the Government of National Unity should concentrate on fostering sustainable development in the country. Urgently needed interventions in the social service sectors can help to further improve the post-peace agreement environment and cement ongoing transitional and post-conflict efforts. Ensuring the availability of affordable, accessible, equitable and quality health services is one of the first steps toward achieving these objectives.
In the health sector, GONU has been mandated by the Interim National Constitution (INC) to provide free health care to the population. Improving access to service and guaranteeing the health of all Sudanese have become a priority for the Government. Such a policy is warranted by the Government’s commitment to achieving the Millennium Development Goals, the agreed international yardstick for sustainable development. The Federal Ministry of Health is faced with the challenge of ensuring that appropriate actions, framework and direction are in place for Sudan to achieve these objectives. Various types of constraints limit progress toward the established goals. Increased financial resources are needed to overcome these constraints. Enhancing equity in service utilization, increasing efficiency in service delivery, improving the quality of care and addressing the needs of vulnerable groups are among the main challenges and priority areas for Sudan health system. All of these issues relate essentially to the way health services are financed.

The National Health Insurance Fund (NHIF) covers less than 30% of the population, mostly government employees. The majority of the population is required to pay to access health services. While development partners, including UNICEF and other UN agencies, other bilateral and multilateral donors and non-governmental organizations, have so far contributed to the financing of the health sector, the Government should remain the most important source of financing for this sector. Public expenditure on health, which was $US 474.7 million (or $US 12.2 per capita) in 2006, is inadequate in regard to the desired objectives. This expenditure has been rising over the last two decades. It has increased by more than 40% between 2004 and 2006. The rapid increase in public expenditure is an indication of the Government’s commitment to improving the population’s health conditions. As stipulated in the INC, the Government aims at giving free primary health care to the population, starting with children under the age of five years. This should be a first step in aiming to achieve financial sustainability of the health sector, and should be pursued actively in the future.

4.6.2 Human resources

The human resource element figured out as a continuing problem during the programme. There is a quick turnover of health personnel at state and local levels to the extent of affecting the continuity of the programme and the follow-up of planned activities. Staff leave their posts for better earning jobs in Sudan or abroad, or for more attractive positions in Khartoum or big urban centres. The overwhelming majority of health and nutrition personnel met at State level were in their posts for less than two years. This continuity problem meant that training programmes had to be repeated to cover a minimum core of personnel who understand and can implement programme activities with reasonable quality and adequate skills.

Apart from qualitative problems, there were also quantitative problems of health personnel. In 2006, the health sector had a workforce of 6,132 health personnel of which 12% were physicians, 10% medical assistants, 28% nurses and 16.5% midwives. Overall, the numbers were inadequate for most categories of health personnel. The ratio of population to health personnel was high for most categories of workers. As part of the expansion plan, the Government had an extensive training programme for some categories of personnel. This programme included in-service training of 2,460 medical assistants of rural hospitals, health centers and basic health units, as well as training of 11,487 midwives in ANC, FP and EPI.

Health personnel are not evenly distributed across the country. For example, with 25% of the population, Khartoum has 37% of health personnel, which gives it 50% better coverage than the average of the twelve states of the north. Four states, Northern, River Nile, Red Sea and Khartoum have between 31 and 72 percent better coverage than the average of the twelve northern Sudan states covered by the 2006 workforce survey. In contrast, states like Gadaref, North and South Kordofan and Blue Nile are below average.
Health personnel are also not evenly distributed within each state, with the tendency to have health cadres clustered within the state capital and not in the localities. It has been observed that PHC facilities were erected or rehabilitated by the Programme only to stand empty due to failure to appoint the health personnel needed to run them. The government commitment to create new posts (for Medical Assistants, Nurses and CHWs) in the successive current budgets is lagging behind the available facilities, which also lack equipment and furniture. Ostensibly, there is also need to train PHC cadres to make these and any other new facilities established for delivery of PHC services.

Village midwives, a crucial health cadre for the welfare of women and children in the rural areas, are the only cadre still left without financial support to integrate them within the health team, although there are plans to make budgetary provisions for covering them in some localities of some states. Nevertheless, the training of this important health cadre has been continuing with vigour in some 40 midwifery schools throughout the country due to UNICEF and UNFPA support, and the coverage of communities with more than 2,000 populations is steadily increasing ensuring service delivery of safe reproductive health services to thousands of women at risk. The support for midwifery training contains a local component, the main area of maternal health that has been supported by the GOS in the past years. In addition, the new curriculum for “technical midwife” is designed to recruit girls with a basic schooling, and the designed curriculum for the nurse midwife is to recruit girls with a secondary school graduate. This upgrading or academic training of midwifery school needs to be cautious, since graduates might more likely seek job opportunity in cities. Such type of training might even undermine a hitherto successful experience of selecting young girls in consultation with their communities to be trained then return to their villages where they are apt to stay and deliver services to their needy people.

While, the rapid expansion in midwifery training represents definite advances in the way of tailoring health planning to community needs, the activity of VMWs is suffering from stark supervisory and remuneration problems and set-backs justifiably labelling them as the abandoned health cadre. In the year 2006, there were about 10,101 VMWs practicing in the Sudan, giving an overall ratio of one per 3,851 population. However, there are wide inter and intra-state variations reflecting pockets of inadequate safe motherhood which need especial attention.

4.6.3 Social acceptance

The social acceptability of the Programme was high. This was observed when the team visited the CFCI communities. At the grass root level people have been appreciative of the health and nutrition services provided to children, women and the community at large. The importance of immunization of children against a host of diseases has become a social norm. People no longer evade immunization of their children for the unjustifiable fears of reactions or side effects. They look forward to the specified dates when their children receive protection from disease. Women also have become aware of the importance of TT immunization and iron supplementation during pregnancy. Therapeutic feeding and supplementary feeding centres are now looked at as life savers for vulnerable malnourished children.

Community mobilization and participation have resulted in a high degree of public awareness of malaria and its control. Insecticide-treated nets (ITNs), one of the key interventions promoted by Roll Back Malaria (RBM) programme, have spread far and wide into remote communities and are being accepted as a protective measure against malaria. While people in different communities were accepting the new malaria preventive and curative remedies with Artesunate derivatives, they were also appreciative of getting the drugs free of charge and were seeing the benefits of this in terms of a lesser burden of the disease in their areas.
The Programme has penetrated into the social fabric of communities and people look at it as a response to a need. Community awareness and organization is becoming part of daily activity. The formation of health committees, community centres is spreading far and wide in villages, especially those targeted as CFCI communities.

4.6.4 Operation and maintenance

The operation and maintenance of the Programme depended largely on the personnel in position at field level. By and large, these were expatriate UN/NGOs personnel with Sudanese personnel supported by external funding. The scant numbers of SMOH staff in various states suffered from a quick turnover. Supervision was weak and became a rarity in most states due to lack of transport. In many localities there was seasonal interruption of activities by a long rainy season. In some areas, especially in Darfur, insecurity was an obstacle to routine operations. In others, like South Kordofan, the transitional status of governance was a challenge to the smooth running of operations. Many activities suffered from the existence of two, sometimes more than two, parallel systems. Continued attempts for reintegration are being exerted, but have not yet materialized.

Throughout the programme period, the Country Office held both mid-year and annual reviews to assess progress and make recommendations toward an improved subsequent achievement. The Annual Review recommendations feed into planning for the coming year and implementation of recommendations are reported on during regular programme coordination meetings, AMTs and CMTs. Although this process has been taking place regularly, continued follow-up on recommendations is needed.

There were also areas where programming was difficult, or impossible, during the programme period. In Darfur, humanitarian action was severely hampered on several occasions by a recurring state of insecurity. Some IDP camps were inaccessible for long periods of time and some areas continued to be unreachable by humanitarian agencies. This led to inability to ensure systematic and sustained service provision, as agencies became more reliant on periodic air access and security clearances. Funding levels during the programme period were uneven between states. Funding for Darfur was strong throughout due to the especial circumstances of the emergency situation, in many years exceeding the target amount before the end of the year. On the other hand, numerous activities in the non-Darfur areas received significantly less than was needed to make the anticipated progress against planned results.

4.6.5 Cost recovery

The only cost recovery factor seen in parallel with UNICEF Programme was the revolving drug fund (RDF) established at local level by village health committees in collaboration with the health worker (Medical assistant, nurse or CHW) at the local health facility. The community shares the cost of drugs other than those provided by UNICEF by paying a lesser sum than in the market. It is observed during field visit that this could be a deterrent to health service utilization, particularly the poorest among the poor. Some NGOs were reluctant to open free health service and stated it might ruin the current RDF practice.

The issue of equity is crucial to the programme sustainability. Although the GDP per capita has doubled since the end of the 1990s, income distribution is not even and is much more skewed toward the privileged few of the population leaving out the majority. More than 70 percent of the Sudanese population live under the poverty line and cannot easily afford to pay for the treatment of common illnesses. The problem is starkly observed in the poorer and transitional states where poverty is deeper and the health delivery system weaker.
This picture indicates weaknesses in the government mechanisms of health financing. In particular, revenue collection is made difficult by the socio-political context of the country. There is need for more diversified sources of financing. In addition, the capacity of the health system to pool available resources and spread risk across the population is limited. The only prepayment scheme available in the country is the National Health Insurance Fund, which covers mostly civil servants, leaving out the poorest social groups. As it stands now, the NHIF has complicated, if not aggravated, the equity issue. More has to be done to increase insurance coverage and to subsidize the services needed by the poor and vulnerable social groups. In the foreseeable future, the provision of minimum health services free of charge for all Sudanese could be the only available solution to the equity problem.

4.7 Health information, data and data quality

Data constraints in Sudan are severe, in terms of quality and consistency. Those constrains were summarized as below:

4.7.1 Denominators

The last census in Sudan was conducted in 1993 year. Since then, the projected population has been estimated with an annual population growth rate of 2.6%. Various resources have quoted the current Sudan population between 30-50 million. At State and Locality level, the IDPs resulting from conflicts, and people moved due to unemployment or natural disaster, causes extra difficulty in clarifying the denominators issue. This affects the sampling frames of all surveys. In practise, the EPI programme denominator data used to inform its NIDs have proved useful to provide information on villages, and estimated population in each state and village.

On top of IDPs and population movement, the borders and numbers of the states/localities and their administration have changed as well. Since UNICEF had a strategy to provide intervention at community level, periodical reports often used number or percentage of localities covered as quantitative measures. The change of localities and inconsistency in reporting has made these quantitative measures to be meaningless as indicators of trend.

4.7.2 Case reporting and routine data collection

Sudan made efforts to collect reported cases and deaths in epidemic disease. It included measles, malaria, and other epidemic disease. Malaria reported cases have been systematically strengthened, the cases and the deaths were used to indicate the trend and if the control measures worked. Though we tend to be positive on the current achievement of Malaria control in Sudan, one has to be cautious. During 2002-2006, the practice, such as rapid test of malaria, the diagnosis including lab skills, the treatment, were been improved, the strategy was updated and implemented, though with different pace in states. As to measles, a WHO EMRO mission rapid survey in year 2003 found that measles cases and deaths were grossly under-reported with cases being 10 times more than actually reported. Many diseases, such as meningitis, pneumonia, yellow fever, malaria, struck the same area with similar syndrome like fever, would only make the case reporting extra complicated.

There was much health information on the ground which either were not recorded carefully, or neglected. There was also much health information on the ground which could be further utilized. The Primary Health facilities had routine information for the visited patients such as name, age, gender, first visit or not, diagnosis, and treatment. Though there was effort to incorporate midwife into health system, and expand health cadres in community level, recording death, the cause of death, the birth, the weight of the birth, remained issues unchanged/untouched for decades.
4.7.3 Reported Data on Coverage

Except for the inflated data that often happened in supported projects, the reporting presented a big concern. There was no consistency on reported coverage data to be used to check or compare year by year progress. For example, the IMCI approaches were reported as the numbers of Health Area System covered, on other occasion, it was conveniently reported as numbers of localities, or communities, or health facilities, were covered. There was no denominators about the people, no nominators about the beneficiary. If there is a percentage, we had no clue how it was from and how it meant. Sometime even time was a problem, as there was no baseline description of each year, one can’t tell the data was achieved by this year or by last year or a cumulated one, or simply a target to be achieved in the future. The phenomena were a chronic since we spotted on all yearly reporting and periodical reviews.

4.7.4 Weakness of institutional memory

The reality in Sudan is that there was high turn-over of human resources, not just national and state level, but also at international level. In states like South Kordofan and Darfur, it was difficult to find professionals that have worked more than two years in the same facility. If there was no mechanism to ensure the routine data collection and standards to report and present data, sooner or later, weakness of institutional memory would prevail, as well as the loss of lessons learned and the best practice which could be utilized in the future.

4.8 Programme after 2006

In view of the evolving political situation in Sudan, particularly related to preparations for elections and the unresolved situation in Darfur, the UNCT agreed with the Government of National Unity initially to extend the 2002-2006 UNDAF to 2007. Subsequently, the UNDAF was further extended to 2008, with a view to having a multi-year UNDAF for 2009-2012.

At the end of 2006, it was recognized that in spite of some progress during 2002-2006 programme cycle, Sudan was not yet on track to achieve the MDGs goals. It was also recognized the intervention projects were not well integrated. In light of progress of immunization and its expanded immunization facilities and coverage, in light of weakness of the public health system, an innovative strategy, the Accelerated Child Survival Initiative (ACSI) was promoted.

In response to advocacy by UNICEF, the Government of Sudan had adopted the Accelerated Child Survival Initiative as a strategy to expedite the achievement of the MDGs. Therefore, ACSI has become the most important strategy for the 2007 and 2008 programmes and is likely to continue to be so in future years.

ACSI was an integrated, results-based approach aimed to assist countries to expedite the achievement of the MDGs. It was implemented in West and Central Africa to reduce high IMR, U5MR and MMR in the resource limited countries with high burden of diseases.

In 2007 in Sudan, using the current immunization structure and service, an integrated measles campaign (measles vaccination, deworming, hand washing and breast feeding promotion) targeting 1.5 million children in six states was undertaken at the end of the year as part of the ACSI ‘Jump start’ with a coverage of 96%.

In 2008, the essential child survival interventions for ACSI campaign in Sudan were expanded into 9 states. The intervention were expanded, which included measles, OPVs, Vitamin A, lipoid capsules,
deworming tablets, bed net, health education messages, etc.

During interviews and field visits, ACSI was expected by professionals at all levels to be a cost-effective approach to accelerate the progress and bring down rates of child and maternal mortality.

To mirror the progress during 2002-2006, other programme activities, such as nutrition, reproductive health, PMTCT, malaria, emergency support were ongoing. It was recognized that nutrition activities focused heavily on emergency response in 2007, to maintain the gains during 2002-2006 programme cycle. Activities in the Northern Sudan focused on support to micronutrient deficiency control and nutrition activities with varied level of success due to counterpart capacity or competing priorities. PMTCT services were expanded dramatically in 2007. Seven PMTCT centres were made operational in RH focus states. The numbers of HIV/AIDS positive pregnant women were quickly increasing, though the test rate was remained to be a challenging. The provided emergency support included meningitis and AWD/cholera outbreaks and floods response in 2007. PHC supports and IMCI strategy were continuing in Darfur and other states after the programme cycle.
5. Lessons learned and Suggestions

During the cycle 2002-2006, the programme faced a variety of constraints pertaining to different projects:

**In 2002:**
- Funding constraints of counterparts.
- Inefficient utilization of funds in some states.
- Inadequate planning and implementation/management capacity at the state, locality and community level.

**In 2003:**
- Inadequate financial resources for most health programmes. Government budget allocation was less than 1% of GDP resulting in little or no counterpart financial contribution.
- Inadequate technical/managerial capacity at the state, locality and community levels due to lack of qualified staff and high turnover/attrition of skilled or trained personnel resulting in weak programme supervision/monitoring and poor co-ordination of activities at state level.
- Poor utilisation of available immunisation and other health services (high drop-out rate and missed opportunities).
- Insecurity in the western and eastern states, seasonal geographic access in central and southern States
- Weak information system at all levels
- Health system support – availability and affordability of essential drugs

**In 2004:**
- CFCI failed to deliver all planned sectoral interventions due to armed conflict and displacement, lack of access by road during the rainy season, the inability of partners in state governments to meet their planned financial contribution, weak programme coordination, high turn over of trained staff, and the lack of adequate transport and communication facilities for programme supervision/monitoring.
- Immunization Plus faced constraints of low or poor skills, knowledge and management capacity of EPI officers at the State and locality levels, weak EPI structure and inadequate staff at the National, State and locality levels, weak social mobilization to create and sustain demand for routine immunization services by communities due to lack of funding, limited private sector and professional group participation and contributions, low community awareness and participation in planning and implementation, poor motivation of health providers, weak PHC system – non-integration of health services, and low and inadequate government financial contributions.
- HIV/AIDS suffered from under-funding, delayed implementation due to the Darfur emergency, weak technical capacity of SNAP, weak networking (SAN) and weak UNAIDS.
- CFCI review confirmed that plans of action continued to be hampered by armed conflict and displacement, lack of access by road during the wet half of the year, delays in the release of funding, and inability of partners in government to meet their planned financial contribution. Implementation has also been delayed and impeded by the project’s commitment to finding and working in the most remote and disadvantaged communities.

**In 2005:**
- CFCI continued to suffer from non-delivery of all planned sectoral interventions due to the same constraints. CFCI National Review pledged to secure federal government financial contribution to accelerate implementation of planned interventions, building the capacity for community-based conflict resolution, reconciliation & re-integration in locations of return, strengthening linkages between the community and the government, NGOs responsible for
service provision to enhance the prospects for sustainability, more avenues for community to have access to the resources required to implement future activities, the establishment of functional technical committees for CFCI at locality level, and increasing the circle of partners, especially among the UN to include WFP, FAO, UNFPA and UNDP

• Immunization missed main opportunities for accelerated progress due to insecurity in greater Darfur and some parts of the eastern states, weak social mobilization to create and sustain demand for routine immunization services by communities, and low and inadequate government financial contributions.

• HIV/AIDS continued to encounter weak technical capacity of the national counterpart, religious and cultural resistance to talk openly about HIV/AIDS and related issues, under-funding and under-staffing and lack of coordination mechanisms and low commitment to a joint work plan amongst all partners.

In 2006:

• All health projects suffered from low funding for non-Darfur programmes and delayed funding in early 2006 for Darfur, shortage of qualified human resources at managerial and operational levels in the states due to lack funds, response to disease outbreaks consuming significant staff time and resources, and insecurity and increased violence in Darfur leading to lack of implementing partners in difficult to access areas due to withdrawal of NGOs.

• Nutrition project suffered from inadequate capacity of the Ministry of Health at both the state and federal levels, slowing the establishment of the malnutrition treatment in paediatric units and development of the minimum nutrition package, insecurity in Darfur made access to programme areas and programme implementation difficult, phasing out of nutrition partners in Darfur due to funding gaps, insecurity or perceived end of the Darfur emergency has increased the burden on UNICEF.

A number of Lessons and suggestions, at areas such as program design and management, policy and strategy, programming and implementation, were listed at below for further improvement.

5.1 Program Design and Management

5.1.1 Setting realistic/clear targets in programme design

The first lesson learned in programme design is to set realistic targets to be achieved against a baseline which does not exist for the reference time period in question.

Without a range of additional indicators to specify periodical project output and outcome, without a logic link among them, one can’t tell if and how the ultimate goals or impact of the Programme regarding mortality, morbidity, and malnutrition were achieved. More realistic periodical targets would be to use process indicators that would measure improvement. For example, the Sudan has been using a maternal mortality ratio of 509/100,000 live births for the last two decades since its calculation by the indirect sisterhood method in the safe motherhood survey of 1999 SMS, 1999). This estimation of the MMR pertains to a time reference period of several years (5-13) prior to the date of the survey. In such circumstances it is difficult to monitor progress in reducing the MMR, and even more difficult to ascribe any reduction to the intervention being examined. This raises a debate about the validity of indirect estimation methods used in surveys and their practical importance to future impact assessment.

More specific indicators that were better used to assess the coverage, quality, and accessibility of the service, emphasize the human right dimension, should be used during programme design and consistently measured through the programme implementation.
For example, in terms of RH services, such indicators may be grouped under:

- Improved access to RH services: e.g. % of pregnant women delivered by a skilled health worker, % of institution versus home deliveries, % of emergency obstetric versus normal deliveries, change in the causes of maternal deaths.
- Improved quality of RH services: e.g. % of high risk pregnancy referred to higher level of care
- Improved access to RH information: e.g. Knowledge of 3 FP methods

A comprehensive situation analysis and assessment should be used to identify the priorities/gap and clarify the baseline. This is not necessary a new survey, but utilization and analysis of the available data, studies, and survey.

5.1.2 Develop a comprehensive and implementable monitoring and evaluation plan

There was no well laid plan at the beginning of the programming regarding to the continuous data collection, the frequency, the responsible body, the forms to be used, the frequency, the report requirement, and the verification.

As a result, only EPI indicators were consistently tracked and reported all the year according to the annual report, but other indicators were reported not consistently and the language used was vague and the understanding was various, as a result it was difficult to tell the change and the coverage on the population.

The indicators should be defined clearly to avoid confusion and ensure it is comparable cross time and/or cross country. The number and percentage should be both emphasized in Sudan. Denominator should be given. The language to be used to describe achievement or results should be able to tell the change during the period.

5.1.3 Health information and data quality issue should be addressed

Health information and its routine collection should be emphasized at national, state and facility level. The issue should be addressed during programme planning, as well as programme implementation period. For large scale international aid, the organization such as UNICEF should also have a routine data collection and analysis to track the situation and guide the further planning and inter-programme integration. The same database, or even spreadsheet, should be used to record time, place, action taken, people covered verse people needs, responsible body, etc. The database should be updated to tackle the institutional memory lost due to the high turn-over of the human resources. Health financial information needs to be addressed.

Data should be periodically audited or verified during the routine monitoring or supervision, or through contracting to other bodies such as NGOs.

5.1.4 Targeting the most disadvantaged communities to converge the intervention

UNICEF-GoS health programme designed to provide the service to the disadvantaged communities. By targeting the disadvantaged remote communities on health promotion and primary health issues, it meant to provide the service to reach the most isolated areas, the people with the least awareness the development of the outside, with stigma or taboo on certain behaviour or practice. It meant days of travelling in muddy bumpy road, therefore unavoidably resulting in lack of continuum of service and its supervision. In the end, initiatives were ended out just like many initiatives-no replication, no scale-up.
Taking the limited resources into consideration, the strategy means losing the opportunity to support those who had a capacity and willing to change, losing the opportunity to bring a quick-win, losing the effect of “model” community on the neighboured community, losing the population effect which is needed to meet the MDGs. A balanced strategy to accelerate the MDGs achievement, and meanwhile in line with the mandate of the organization to serve vulnerable children and women, might be worthy in the next programme cycle.

5.1.5 Programme management, coordination and supervision

The linkage/integration of program activities into health system, and lack of follow-up supervision are the new challenging now after the initial service was delivered and capacity was built. Vertical interventions were conducted all the time.

Regarding management in UNICEF, the lessons were learned and accumulated during the programme cycle. Recent year, the situation was greatly improved by planning early, proactive fund raising, rapid disbursement of PBAs to programmes, standardised the form, training the counterparts, and decentralization of managing. Zonal office appreciated the decentralization process and liquidation system, though there was a gap to understand the process due to high turn-over of the state counterparts. At UNICEF country office, the cash allocation and liquidation had met great complains. The problems will remain if the decentralization is not implemented, and if no clearly break-down of the work plan and budgeting.

5.1.6 Inter-sector collaboration

Although there was institutional effort to create CFCl Coordination Unit and Community Development Committee (CDC) at state and community level, at primary health areas, the integration and coordination were not improved. It seemed to even suffer since state departments refer to each others for the failure of service provision. The responsibility of involved state ministries needs to be clearly defined. In addition, CFCl and its CDC should be used as an approach to mobilize and promote health related and cross-cutting issues such as health education, water and hygiene promotion, breastfeeding and nutrition practice, birth registration, and immunisation.

The role of women role needs to define explicitly to allow them to participate and monitor the projects actively.

Inter-sector collaboration such as girl education regarding child and maternal health related issues, before leaving school, and out-of-school, needs to be addressed to bring a significant improvement on mothers education. Inter-sector collaboration, on birth registration, water and hygiene promotion needs to be strengthened in the coming programme cycle.

5.1.7 Suggestions for the future

- Setting realistic targets in programme design, against the baseline. The indicators should be defined clearly. Additional indicators such as process indicators should be used to measure and compare across the country and across time. The indicators should be broad to target to different priorities in different states. Allowing for regional variation in the setting of targets would accommodate the existing great disparities between different states.
- Develop a comprehensive monitoring and evaluation plan to be used for the programme cycle
- Health information, including health financial information, should be emphasized, routine data
collection and data quality issue should be addressed. The state and locality should have clear instructions regarding which health information are essential and how/when to collect them and how it can be used. The federal level should maintain political and administration stability so that states and localities are not keep changing.

- Balance on disadvantage community and quick win to achieve targets on population level.
- Continue decentralized management, better budgeting. Federal level should have more focus on policy/guideline development, planning support, supervision, monitoring and evaluation.
- Improve programme implementation and its quality, with effective coordination, more attention to the routine management, the quality of supervision.
- Service integration and linkage should be systematically examined, with an action plan to fill in the gap and improve the operation and its collective effect.
- Inter-sector collaboration such as girl education on maternal and child health, birth registration, water and hygiene, needs to be further addressed to bring a significant improvement. The collaborations with CFCI on healthy habit, child health and nutrition promotion should be strengthened to make good use of the available CFCI structure.
- Enhance efficiency through better communications among partners.

5.2 Policy and Strategy

There were a number of key lessons learned with respect to the development of policies and strategies by the country to serve the objectives of the programme:

5.2.1 Working through the odds in delays in design and adoption

The programme started in 2002 with no clear policies at hand to guide its activities. For example, there was no clear RH policy, no clear nutrition policy and no clear disease control policy. Various policies were developed during the Programme cycle, and took time to be drafted and adopted. Nevertheless, the programme managed to start the ball running by adopting the internationally set strategies, while urging and helping the Government to develop the required strategies and policies.

The majority of strategies and policies were finally adopted since 2004. This was mainly due to close follow-up and perseverance of UNICEF and other UN partners and is certainly going to pave the way for a smooth take off of the next and overdue Programme cycle.

5.2.2 Working through the odds in implementation

Even when it is adopted, the poor implementation further loses the time to bring an immediate effect on the beneficiary. Banning the production of un-iodised salt and providing the iodised salt on the market is the most effective way to promote iodised salt use. This was recognised in 2003; in this year salt specification was endorsed banning the production of un-iodised salt in the country. Yet in 2006, the implementation was in rather poor shape, the targets were far beyond reached. Only one state, South Darfur, where the policy has been enforced has increased consumption of iodized salt in the state to around 40%. By contrast, in the South Sudan, all states had better rate of consumption of iodized salt because of imported salts to sell on the market (most from South Africa) were iodized.

5.2.3 Continued advocacy for more policies/strategies

There is ongoing advocacy with the Government for appropriate mix and skills of staff to implement the health programme. There is a need for government to establish and conduct a human resource development policy and plan for the health programme.
This is in line with the outstanding efforts made for the design and adoption of appropriate strategies and policies during the reviewed Programme cycle of 2002-2006. By the continued advocacy for more policies, UNICEF and partners would set the example for viable health and nutrition programmes in the future. In a big country like Sudan with wide regional variation there is a need to broaden the policy and approaches to enrich the programme with a variety of innovative ideas that could emerge from this diversity. Involvement of the states in this exercise would go in line with the evolving federal system of the country.

5.2.4 Sustainability policy not addressed

During the programme period there was no clear GOS commitment to take over financing of different activities (government commitment was only secured for the cost EPI syringes only in 2007). As a result the question of sustainability continues to be a burning issue. There is need to spell out government commitment very clearly to ensure sustainability of the health and nutrition programme which targets the majority of the population. And the national financial contribution on health should increase annually.

5.2.5 Suggestions for the future:

- Refine existing national strategies and policies: The existing strategies and policies need to be up-dated to provide better guidelines for implementation of programme activities.
- Develop state strategies and policies to enrich the programme with a variety of innovative ideas. Involvement of the states in this exercise.
- Adopt suitable baseline data: Encouragement of state and locality surveys would produce more suitable baselines data to be used by different regions in the country.
- Shift the focus of programmes from emergency support to sustainable development, focus on identify the gap of service and filling the gap. To take a balance between service expansion and quality of the service.
- Enlist government commitment to sustainability: The spoon feeding approach so far adopted by UNICEF and partners cannot continue un-hampered by donor limited funds or political instability. To guard against sudden fluctuations in the flow of funds, there is need to develop a strategy for programme sustainability to be gradually and smoothly introduced. There should have a shift of focus from emergency to sustainable development.
- Retain human resources to prevent brain drain and high turn-over should be simultaneously addressed through providing capacity building and continuous on-job training. Collaborate with key organization such as WHO, for the sake of sustainability development, the country should put the issue on top agenda. A policy to attract its high level health professionals to return to the country, as well as providing promising career perspective, should be created. This might not necessary mean higher payment; it can be a combined motivation package including family support, house allowance or benefit, work conditions, project support such as fund and staff, transportation, etc.

5.3 Suggestions for specific programmes

Except for the lessons identified and suggestions as above, suggestions for specific programmes such as EPI, IMCI including malaria, and HIV/AIDS, should be learned, are introduced as below.

5.3.1 EPI

- Continue to expand the routine immunization service, enhance the supervision of the routine immunization service improve the quality of the service and the coverage.
- Improve the efficiency of the immunization by improving routine immunization service, by
making campaign truly complement to routine rather than repeating.
• Increase financial contribution at federal level to gradually take over the service.
• Enhance coordination across the border, including routine service at border areas. Proactively react by stronger border control or prevention measures or additional surveillance when disease outbreaks in direct or indirect neighbor countries such as Polio.
• Jointly conduct and monitor immunization coverage among IDPs across the borders, and enhance the information exchanging and sharing.

5.3.2 IMCI, RH

• Improve capacity of first level of service providers, in terms of curable treatments and community health;
• Continuously integrate capacity building on service providers, such as on-jobs training, continuous education, and link it to the job performance, motivation package and career movement.
• Improve the quality of the primary health service through guidelines, effective management and supervision. Explore the potential of primary health first tier service providers to provide integrated service such as community health, nutrition, and obstetrics care.
• Improve support to prevention activities such as vector control on malaria, equally mosquito nets distribution and monitoring of its proper use.
• Establish and provide essential primary health care service to returnees.
• Key opportunities to accelerate progress and gain quick wins, such as the ACSI which attempts to scale up existing programmes, capitalizing upon basic structures already in place while identifying capacity and resource shortfalls and prioritizing specific activities at community, sub-national and national level, should be fully explored.
• Scale up and replicate the evidence based best practice to meet the MDGs.
• Expand PMTCT service. Routine and free HIV/AIDS test should be provided among more ANC clinics. Increase the test rate and provide comprehensive intervention, including care and follow-up package to the positive pregnant women and her family.
• Collaborate with organization such as UNFPA, develop policy and advocacy to encourage family planning and child spacing
• Scale up the current support on reproductive health, including midwifery school training, provision of EmOC service, its referral service and filling the gaps.
• A careful assessment on midwifery training: priority should be given to train the midwife serving the needs of rural population. Or, a mechanism should be established to encourage highly educated midwife serving the rural people. For example, providing housing and other motivation package, 1-3 years contract in first-tier facilities before moving up into hospital, etc.

5.3.3 Nutrition

Human resources remain factors affecting the sustainability of the nutrition programming at National and State level. At State level, Locality and Facility level, human resources and management needs to be strengthened. This included, but not limited to, numbers of posts needed, qualifications, and responsibilities, capacity building plan, supervision and motivation. The technical assistance of UNICEF to the nutrition programme was weakly represented at zonal level, such as transitional states, due to lack of dedicated technical staff, though the UNICEF Country Office exerted efforts on technical support during the Programme cycle.

There was regional/state differentiation in terms of the approaches/activities used, to tailor the local context. The management and supervision remained to be challenging observed during the field visit.
It was observed that TFCs affiliated with hospitals have moderate bed occupation rates. This was also partially because some of the acute malnutrition cases were referred from other departments of the hospital on a routine basis. The referral system between TFC and SFC was also developed. Babies with malnutrition, after treatment in TFC, were transferred to SFC for further care. The potential of other TFCs and community facilities could be explored further to improve the efficiency. This could be done through supervision and linkage with primary health system or other sector such as CFCI.

A careful evaluation of current facilities, the capacity and management, was needed before the decision was made to expand the service. Cost-effective approaches, such as community management practice, were recommended by NGOs in transitional states, such as South Kordofan.

The incomplete survey data from Kassala state in a few accessible localities indicated that the situation of malnutrition was slightly improved. Surveys and facilities record in Darfur indicated that malnutrition situation was at least not deteriorating, although it presented a seasonal pattern and was related to the crops harvest and food security situation heavily.

Nutrition surveillance was an important component of the Darfur programme. The surveillance was well conducted from sentinel sites including camps and community. The data was collected on a monthly basis and the information was used to monitor the situation, and for advocacy and intervention targets. However, the nutrition surveillance system beyond Darfur needs to be improved and expanded. Efforts need to be made to address the incomplete information in other states of the country. And once the information was available, it needs to periodically analyzed and shared among the stakeholders. The advocacy, intervention and monitoring should be followed.

In summary, the below suggestions would contribute to the improvement of future programming.

- Explore the capacity of current TFC and SFC facilities, with active identification and referral of malnutrition cases to increase enrolment. Improve the supervision of current facilities.
- Provide and scale up cost-effective approaches such community level nutrition promotion and practice.
- Integrate interventions with routine primary health care and community health. Continuous capacity building to community level service providers such as midwives, community health worker, medical assistant, etc. Enhance the supervision.
- Enhance policy and its implementation at state level such as iodized salt.
- Identify innovative integrated approaches to prevent and control child malnutrition. This could be done by strong spectral linkage with hygiene promotion, poverty reduction, food security, and mothers’ income generation and education.
- Strengthen nutritional surveillance; improve the quality of the data, the dissemination, and its use.
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- Multi-Indicator Cluster survey 2000
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Annex

Annex 1: Terms of Reference

Background
The government of National Unity, then Government of Sudan, and UNICEF signed in 2001 the country programme of cooperation with the overall goal of assisting the Government in its obligation, as set out under the Convention on the Rights of the Child, to protect and promote the rights of children to survival, development, protection and participation. The programme’s goal was translated into three main objectives: a) to reduce child mortality, morbidity and malnutrition; b) to promote the protection of the most vulnerable groups; and c) to develop a peaceful environment conducive to the realization of children’s and women’s rights.

The country programme pursued the following strategies towards the realization of the main objectives of the programme.

• First, child rights and peace building formed the normative framework for all interventions. All components of the programme provided a base for protecting child rights, promoting conflict resolution and grassroots peace building. Examples included: the selection of intervention communities with a view to furthering rights protection and peace promotion; education and information activities in support of these priorities, and strong national partnerships and alliances across all sectors in support of children’s and women’s rights.

• Second, the programme supported key national programmes and policies that were to bring about sustainable improvements to the lives of children and women. This was carried out through technical and supply inputs, capacity building, and advocacy. Public education and information played a key role.

• Third, sector field interventions and community-based initiatives converged on the most disadvantaged states and communities. Key indicators from MICS 2000 and SMS 1999 were used to select nine “focus States” as the most vulnerable in northern Sudan. In addition, the Country Programme continued to operate in Juba, Wau, Malakal and other accessible communities in the Government-controlled south. All interventions within these focus states and communities contributed to building capacities at state and local levels, covering a total population of some 13.5 million until 2005 when the CPA was signed resulting in a separate arrangement for southern Sudan.

• Fourth, each programme was to develop a high degree of emergency preparedness through maintaining plans for rapid response to acute emergencies. To ensure optimal utilisation of resources, donor contributions for emergency situations, resources were allocated within a consolidated Country Programme, which has been planned to cope with such situations. Each of the sector programmes maintained the capacity for rapid response to emergencies with essential supplies and services.

• Underpinning these four major thrusts was a strong component of behaviour change communication. Other cross-cutting themes that were part of the Country Programme that were systematically addressed included gender, youth participation, and HIV/AIDS.

The health and nutrition programme was one of the programme components of the 2002 – 2006 Country Programme of Corporation. The others include Right, Protection and Peace Building; Water and Environmental Sanitation; Basic Education; Communication and Advocacy; and Planning Research, Monitoring and Evaluation. Several health and nutrition issues were identified as priorities and major health and nutrition concerns for children and women in Sudan. Infant and child mortality rates were high and estimated at 93 and 123 deaths per 1000 live births, respectively in urban centres under government control in the South (Juba, Malakal and Wau towns). Malnutrition rates (moderate and severe) in under-five year old children were estimated at 18% in 1991 and 23% in 1999. Malnutrition rates in were estimated to be 19% in the Northern states and 17% in the towns.
of Juba, Malakal and Wau in the South. The low birth rate was as high as 30%, an indication of the poor nutritional status of pregnant and lactating mothers. Malaria, acute respiratory infections and diarrhoeal diseases, combined with malnutrition, were leading causes of death among children. Neonatal mortality was considered an important contributing factor to the high infant mortality.

Immunization coverage rates based on the administrative data were low: 64% measles coverage and DPT3 coverage was 70%. The rural health care system required rehabilitation and expansion as the primary health care facilities and rural hospitals were poorly staffed and lack essential medical equipment. The medical doctor to population ratio ranged from 1 specialist for every 5,000 people in Gezira State, to 1 for every 700,000 people in West Darfur state.

The health and nutrition programme comprised of the following three projects intended to contribute towards reducing child and maternal mortality and malnutrition:

1. **The EPI project** was to have a nation-wide coverage and aiming to eradicate polio, achieve and maintain 90 per cent immunisation coverage in the Government-controlled parts of the country; and reduce maternal and neonatal tetanus to less than one case per 1000 live births. The project planned to introduce new vaccines (Hepatitis B, Haemophilus Influenza type B vaccine), and it planned to strengthen collaboration with partners such as the Global Alliance for Vaccines and Immunisation, World Health Organisation, Rotary and Polio Plus.

2. **The Integrated Child and Maternal Health Project** would, at National level, support national programmes on malaria, IMCI, and HIV/AIDS through technical support, advocacy and communication, and targeted supply delivery in the focus states. At sub-national level, the project was to ensure access for 80 percent of under-five children in focus states to integrated “minimum care” packages of essential health and nutrition interventions, and access for 80 percent of women of reproductive age in the same states to essential obstetrical care services. Special attention was to also be given to improving neonatal care. The project was planned to be carried out through applying the IMCI approach within the framework of the government’s Health Area System, building capacities at state and local level, providing essential supplies, and community mobilisation and education.

3. **Healthy Growth and Nutrition project** was planned to support National level government programmes to reduce micronutrient deficiencies. In particular, it aimed at achieving 80 percent use of iodised salt, and ensuring vitamin A supplementation in EPI activities. In focus States, the project aimed at reducing maternal and child malnutrition by 50 percent through community-based interventions, and ensure 80 percent iron supplementation for pregnant women. All of the programme’s community-based interventions were to be intensified in CFCI communities. All training and sensitisation activities incorporated awareness raising on HIV/AIDS and gender. The nutrition project was separated from the health programme in 2006 to give prominence to issues of nutrition as key growth and development programme priorities. The Health and Nutrition Programme’s budget was an average US$7,746,000 per year and a five year-total of US$38,727,000, while the actual annual expenditure ranged from $US 8,926,547 for Health and Nutrition Programme in 2002 to $US 16,646,952 for Health Programme alone in 2006 with the planned period total expenditure of $US 62,206,037.

During the planned period, UNICEF, GoS and partners made efforts to fulfil the commitments on achieving the programme’s goal and objectives and contribute to achieving the related health and nutrition MDGs. Although some achievements have been realized, there are still several shortages as well as emerging challenges. Infant Mortality rate remains high at 76/1000, under-five mortality at 109/1000, with neonatal conditions, ARI, diarrhoea diseases, malaria and malnutrition, which are largely preventable conditions as the main causes of morbidity and mortality. Prevention and control of HIV/AIDS is also a key priority for the government to avoid the situation where HIV reaches epidemic proportion. Equity in service provision, increasing efficiency in the Health Sector, improving
the quality of care and addressing the needs of vulnerable groups and the poor are among the main challenges and priority areas for the health system.

Justification with the signing of both the Comprehensive Peace Agreement and the Darfur Peace Agreement, the Government of Sudan is looking to guaranteeing sustainable development in the country. The political environment, although improving, remains delicately balanced. Urgently needed health interventions can be used to further improve the environment and help to cement ongoing transitional and post conflict efforts. Ensuring the availability of affordable, accessible, equitable and quality health services is one of the first steps in ensuring this objective and in furtherance of this, the Government of National Unity would like to increase access to basic health care services for all Sudanese. GoS and UNICEF are preparing a new country programme 2009-2012 for which the partners should know the extent of the relevance, coherence, contribution and effectiveness of UNICEF assistance to improve the country’s health situation, hence the need to learn lessons from the 2002-2006 country programme. An independent consultant, other than a UNICEF and or government, staff is needed to conduct a fair evaluation of the 200-2006 health programme.

To be able to achieve the objective of providing health service to children, UNICEF, the Government and partners should learn from the progress made from the 2002 – 2006 Health and Nutrition Programme, and use the lessons learned, solutions and innovations the partners used to achieve the health and nutrition programme results. Several studies and policy initiatives have been undertaken to provide health and nutrition data that may assist in evaluating the progress made, and identifying the priorities for women and children. The Sudan Household Survey, the MBB and the costing of child health services and UNICEF/GoS periodic reviews provide reasonably good information that would be highly useful in evaluating the 2002-2006 health and nutrition programme. The evaluation findings will be extremely useful in formulating the 2009 -2012 GoNU/UNICEF Country Programme. Technical support is very much needed to conduct the end of programme evaluation of the health and nutrition programme.

The consultancy requires technical assistance involving a public health specialist with experience in health and nutrition programme development and evaluation and experience working in a developing country such as Sudan. We propose two consultants to support the evaluation; an external international consultant to provide unbiased professional guidance and support for the evaluation, and a national consultant to provide local background of the county’s political, social and cultural and health system structures.

This end of programme evaluation is a 2007 AWP and IMEP listed activity and is a non-staff function for professional credibility and avoiding bias, the need for consultants.

Objectives
The objective is to carry out a comprehensive end of cycle evaluation for the health programme within the context of UNICEF–Sudan Country Programme of Cooperation 2002-2006 to look at the monitoring and evaluation mechanisms in place to monitor child survival and gain an understanding of the successes and failures during the implementation, draw lessons learned and make recommendations based on the findings. The evaluation is indented to establish an evidence–based policy making framework to inform all the forthcoming policies and strategies for effective learning and for future planning of the 2009-2012 country programme.

The Scope of the evaluation:

i. Relevance: Examine the programme design in terms of impact, objectives, and outcome and their relevance to addressing the causes of the health problems. Review strategies and policies appropriateness’. See whether the programme has been in line to the needs of stakeholders and programme priorities.
Evaluation of UNICEF-GOS 2002-2006
Country Health and Nutrition Programme

ii. Assess the extent to which the health and nutrition programme has achieved its objectives:
   • achievements in terms of programme development objectives and key outcomes and outputs;
   • achievements in terms of outputs for all programme components during the implementation period from 2002 to 2006

iii. To the extent possible, assess the efficiency of key programme outputs (qualitative and quantitative) with a view to identifying relation between costs and results (including unit costs).

iv. To what extent possible UNICEF’s support contributed to the health related UNDAF results’

v. Coherence. Examine the programme and sector policies and strategies and their consistency and particularly those polices that are child-focused and to human rights in situation of emergencies.

vi. Assess the adequacy and effectiveness of the structures established and/or strengthened in support of the health and nutrition programme (including management, coordination mechanism and monitoring) and identify factors which have contributed to successes and/or weaknesses.

vii. In addition, assess the sustainability issues relevant to the key programme interventions and or structures supported/established for the implementation of the health and nutrition programme;

viii. Examine some cross-cutting issues such as women and child rights and gender equality and to what extent these issues have been addressed in the health programme;

ix. Examine coordination mechanisms for the emergency response interventions and resource (funds and supplies) mobilization and draw lessons on the impact of emergency on the health and nutrition country programme implementation.

x. Impact. Look at the wider effects of the programme –social, economic, technical and environmental on individuals, gender, children, and communities. Impact of short-tem and long-term can be of positive and negative effect.

xi. Sustainability. Measure and assess the sustainability of service delivery to the target group. Identify the sustainability elements in terms of financial, human resources, social acceptance, operation and maintenance, cost recovery and environmental impact.

xii. Determine the achievements, progress towards the programme objectives, MDGS, UNDAF as well as outcomes of collaboration and joint programming with partner agencies.

xiii. Assess the extent of the contribution of UNICEF assistance towards the achievement of the MDGs

xiv. Outline the key lessons learned and innovations/solutions for the many challenges encountered in implementing the health and nutrition programme.

xv. Outline how the lessons learnt could be applied to the development of the 2009-2012GONU-UNICEF Country programme.

Specific Tasks: the national consultant is to assist the international consultant with the following tasks:

i. Collect existing health programme data in government agencies for desk review of available information on the health and nutrition programme in Sudan.

ii. Identify and facilitate interviews with the FMOH/UNICEF and other UN agencies (WHO, UNFPA, WFP, etc) and other key partners on the implementation of the health and nutrition programme in Sudan;

iii. Examine the resources (financial, institutional, and human resource) that were made available by UNICEF, GoNU and other partners for the implementation of the health and nutrition programme, identifying resources and implementation strengths and gaps.

iv. With the international consultant, propose or suggest strategic directions UNICEF’s input to the Health Sector Strategy in the next 5 years.

v. Facilitate the technical task force meetings.
Assessment Methodology

The evaluation will rely on the following methods:

A comprehensive desk review of documents related to planning and implementation, reporting, monitoring, reviews (including reports from field-visits). The programme detailed annual work plans, which include targets, provision of supplies and human resource capacity building in the form of training in all sectors. The routine, quarterly and annual reports show progress achieved and delays experienced during each year. The evaluation will compare the targets achieved against the annual work plans. Source data is available in UNICEF annual reports and from the state ministries of health and the federal ministry of health offices. Additional documents include assessment and evaluation reports, 2006 Sudan Household Survey reports and several other assessments that were conducted by the UNICEF and Ministry of Health and partners.

Interviews with key informants should be conducted with the Federal Ministry of Health directors general and programme managers, with SMoH authorities at state and locality levels, and as much as possible, with community leaders and members in target states. A group of key informants will include the Federal Minister of Health, Undersecretary of Health, FMoH, The Director General of International Health, Director General of Health Planning, Director General of Primary Health care, The Director General of Preventive Medicine, the National EPI Programme Director, the IMCI National Coordinator, the National RH Programme Director, the National Malaria Control Programme Director and other key FMoH officials which may be relevant to the evaluation. The focus of these interviews and discussions will be on assessing the health programme management (administrative and financial) arrangements for the health and nutrition programme and their impressions on the achievements of the programme.

Cost-benefit analysis will be an important part of the evaluation. The programme has multiple partners and stakeholders, including communities to whom the programme interventions are intended and the Federal Ministry of Health responsible for development, implementation and monitoring of the health and nutrition programme. Other key partners include UN agencies such as WHO, UNFPA, the World Bank and UNAIDS and other stakeholders. It is therefore important to look at the partnerships of the programme and underline their strengths and weaknesses. The evaluation should also examine the prevailing high level maternal mortality with the view to assessing current maternal mortality reduction strategies and impact on the health of women.

The evaluation will undertake cost-benefit analysis in key programme components (where possible by data availability) such as immunization and LLITN coverage. The Child health costing data, which covers immunization and LLIN distribution, etc and UNICEF and other partners support for the selected interventions would be available for cost-benefit analysis. Using the available data, the evaluation will derive and compare unit costs such as cost per child for child immunization and or LLIN use.

Field visits for observation of the local situation, programme accomplishments and interaction with the local population will also be an important part of the assessment. Since all health and nutrition interventions are conducted in the states and localities this, evaluation should in part be based on information available from the Government and UNICEF field offices and localities. The team is expected to visit at least three states, one in Darfur, the other in the transitional states (South Kordofan and Blue Nile) and one in the East(Kassala, Gadaref and Red Sea) to evaluate the health and nutrition programme implementation at state and locality levels.
Expected Deliverables in collaboration with the international consultant

- The interim report with detailed methodology and preliminary findings from the desk review;
- First draft for comments
- A second draft with executive summary and annexes for comments
- Final edited and formatted report with executive summary and annexes, using UNICEF guidelines for evaluation reports.

- The report should in addition include the following elements:
  - The summary of the main achievements of the health and nutrition programme, the main challenges encountered and the solutions and innovation identified to address the challenges;
  - Summary of the important lessons learned that have implications or application in the 2009 and 2012 country programme;
  - Suggestions for strategic health programme direction taking into consideration global, regional and national health imperatives and agreements.

- Dissemination of the draft report at meetings with UNICEF and key partners and stakeholders and use the comments to improve on the report.
- Final edited and formatted report with an executive summary and annexes, using UNICEF guidelines for evaluation reports.
### Evaluation of UNICEF-GOS 2002-2006
Country Health and Nutrition Programme

#### Annex 2: Selected indicators state to state compare, MICS 2000-SHHS2006

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### Annex 4: List Of Persons Met

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<tr>
<td>Mustafa Salih Mustafa</td>
<td>Assistant U-S for Planning, Policy and Research, FMOH</td>
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<tr>
<td>Mohamed Yahia El Abassi</td>
<td>Assistant U-S for Preventive Medicine and Primary Health Care, FMOH</td>
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<tr>
<td>Isameldin Mohammed Abdalla,</td>
<td>Director General, International Health, FMOH</td>
</tr>
<tr>
<td>Tarig Abdel Gader</td>
<td>Director, National Malaria Control Programme, FMOH</td>
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<tr>
<td>Amani Abdulmoniem</td>
<td>Director, National Nutrition Programme, FMOH</td>
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<tr>
<td>Amani Abdulmoniem</td>
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<tr>
<td>Limiaa Eltigani</td>
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<tr>
<td>Hannan Mukhtar</td>
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<td>Shaza Mohie Aldeen Yousif</td>
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<td>Wifag Salah A. Mabrouk</td>
<td>Reproductive Health National Officer, UNFPA</td>
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<td>Maria Emanuela Brair</td>
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<tr>
<td>Shah Waliullah Siddiqi</td>
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<td>Hayfa Elamin</td>
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### Annex 5: Work Plan and Timetable for End of Cycle Health and Nutrition Programme Evaluation

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Final Report

Dr. Hongyi XU
Professor Ahmed Bayoumi
Consultants for UNICEF
13-1-2009

Country Health And Nutrition Programme